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Original Articles.

REMARKS ON DIAGNOSIS OF DISEASE IN CHILDREN.

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Medicine is approaching the exactitude of a science only in recent years, due mainly to the indefatigable labours of physicians at the bedside, in laboratories, and also to researches of the chemist and physicist.*

Nevertheless, to the reader of medical literature there frequently comes a sensation of discouragement on encountering the accumulation of statements, often contradictory, conflicting, or unrelated, on the same lines of thought. The fault lies in approaching the subject usually without the exercise of a wise critical faculty attainable only through a practical familiarity with the laws of chemistry, physics, comparative biology, anatomy, and physiology. It is by no means necessary that this knowledge should be full or elaborate, but the constant use of a fair and clear concept of fundamental truths conditioning these subjects is entirely feasible and most necessary.

Upon such a concept alone can a sure foundation be laid for progressive medical thought, capable of uniform acceptance and practical results. Diversities in belief must always exist and aid in the development of truth, but in medicine these divergencies are so wide and contradictory that we fall under the grave accusation of cherishing inconsistencies most hurtful to those seeking our advice. A tendency is plainly discernible now, however, among the best authorities to fall back upon elemental principles in forming decisions and recommendations. The one principle which must ever guide us is to think in physiological factors in diagnosis as well as in treatment.

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* These last admit that nowhere in the realm of knowledge to-day is there to be found so brilliant an array of scientific findings as in the records of medical thinkers.

On the subject of diagnosis a monumental literature exists testifying to skilful observation and patient gleaning among the products of wise minds, cemented by the systematic presentation of well-formulated rules. Too often this resembles a towering mass of varied and suitable building material, rather than a finished and symmetric structure evidencing skilful design. Much of this material on examination will stand revealed as mere authoritative opinions which obtain currency because of the keen observation of certain early men of genius, yet is far from exact, and much of it will prove to be mere variants in the history of outworn beliefs. Cherished and respected opinions of great thinkers, especially when simulating truths, have always exerted more influence on medical belief than is warranted. The tendency is to retain these postulates of our earlier teachers rather than to use, as working formulæ, the fundamental principles of growth and change, whereby alone we can do sound thinking. We wânt, not so much new facts, as a more practical application of those already recorded and tested, yet scattered and often unrelated, truths whose efficiency is almost lost by being locked up in large treatises such as on physiology and pathology. The use of these treatises is largely confined to scientific specialists, and too rarely consulted by clinicians. Again, our students should have no fascinating theories taught them, only well-attested facts and truths. Conjectures come to all. We need nothing in medicine more imperatively than teachers with clear practical minds who shall glean the best conclusions of reliable observers and research workers, and present these to the undergraduate in concrete systematic fashion, in tenable formulations unmarred by brilliant theories.*

A constantly recurring error, dominating our concepts of disease, is the tendency to assume one or two symptoms as pathognomonic and lose sight of the symptom complex. A single obvious symptom may predominate in a well-defined disease, but it may also be an expression, or characteristic feature, of many pathological processes;

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* Conversation with many professors in medical schools confirms this opinion.

at other times it may be the result of previous degenerative changes—a neurosis, a psychosis, or an expression of metabolic instability, the result of neurotic disturbances. Indications obtained through peripheral phenomena reveal much, but conspicuously little attention is given to a study of many recognisable phenomena, the immediate result of reflex disturbances in the segments of the cord. Knowledge of the intimate relationship between the arterio-motor mechanism of organs, the nutritive centres and outlying parts of the body, is needed to interpret many generic qualities of disease. Later, the parts affected or obviously disturbed require attention, but not to the exclusion of the primary or central derangement.

We need broad-minded teachers who shall make clear the fundamental principles of early changes from the normal process, its innervation, direct and vaso-motor, hence the normal variations in the blood supply, lymph circulation, cellular equipoise, and the earliest evidences of divergencies therefrom which may proceed so far as to merge into abnormalities producing changes recognisable as disorder, thence passing on to structural alterations sufficiently extensive to be regarded as pathological, and finally into lesions. To do this should not tax ordinary professorial knowledge: it merely demands a different point of view, keeping in mind the simple immutable laws of growth, and presenting them in such a systematic fashion as shall best explain the pathological lines of least resistance.

The subject of disease in childhood or youth can never become plain as it should till the physiological variations between the young and the adult are differentiated for the student. This knowledge may exist, but it is seldom formulated and presented to the undergraduate. Few text-books allude to childhood physiology, except in early chapters, and then inadequately. Those of us who have grown grey in using the older methods may be eagerly alive to the importance of the different standpoint of teaching, but we cannot do what younger men will, ere long, accomplish.

In diagnosis, we have been for centuries proceeding on deductive lines, amassing a vast amount of accurate information, based on, it may be, sound, scientifically winnowed facts, and thence advancing to conclusions more or less practical. When there are more who shall be trained to proceed inductively along the foundation levels of biology, embryology, and physiology, and thence ascend to pathological planes, vastly more light will be afforded by which to apply therapeutic principles derived from the same sources.

We must know more of normal growth and the phenomena of development. The energy of growth is a colossal force and significant in many departments. This may be defined as the sum of all the forces determining physiological work causing the development of a living organism (Tremolière). Potential energy exists as a heritance in the ovaries. After birth energy is required from without as well as from within. While in the adult, nutrition is necessary only to supply waste of the tissues, in the growing child many reasons demand hypernutrition due to its rapid development (Ballantyne).

The child of rapid growth usually fails of symmetric development in several directions. Pathological processes, infections, accidents of nutrition, the influences of environment, etc., all tend to initiate and emphasise minor deformities. Overgrowth usually leads, for instance, to poor thoracic capacity. If the thorax is for any reason disproportionately small and narrow, a variety of special predispositions are encountered. In such individuals glandular engorgements and inflammations are common and difficult to control, pneumonia is more severe and dangerous, also pleurisy and heart disease, especially pericarditis and endocarditis.*

Inadequate gaseous interchanges aggravate disorders of both lungs and intestines; the eliminating organs are oppressed, congestions are encouraged in various parts, and oxygenation is impaired. Of the potentiality of the full functional powers of the great ductless glands we know as yet relatively little. When we do know, and our means of recognising them are better specialised, it will afford excellent grounds for legitimate inferences and useful conclusions.†

In diagnosis our primary purpose is to recognise and elucidate the onset of functional derangement and detect disease in any stage or form. If, however, we fail to devote sufficient attention to morbid phenomena of the mind and morals, we perform less than half our duty. Disorders of the mind are dependent upon one of two factors—either defects of development in the brain, or diseased processes of the brain. The purpose and aim of diagnosis rests upon the concept that by early recognising manifestations of morbid physiology we shall thereby find means to check the changes which would otherwise pass on to destructive alterations. If these departures from the normal processes are recognised in their incipiency, we shall be able to adopt preventative measures with greater hope of success. If this proposition obtains for the disorders of the physical functions, how much more must it fulfil a valuable service for those of the brain, which is of a far more sensitive structure and especially liable to permanent damage from slight irritation.

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* See Woods Hutchinson's "Researches on the Thoracic Index," 'Journ. Amer. Med. Assoc.,' May the 2nd, 1903.

† Chas. de M. Sajous has done much to make this clear, and, leaving out the special significance of his conclusions, still, his book teaches us to think physiologically on growth and change. The second volume of the 'Internal Secretions,' with the contents of which I am familiar, will supply invaluable data by which we may learn to reason more soundly.

It is a great privilege to mitigate bodily suffering, to limit the progress of structural degenerations, to prevent disablement and save life, but how vastly higher is the prerogative to turn aside those perils which jeopardise the budding intellect and rescue a tottering moral nature! Yet how little of this subject is the student taught! or again, how much interest does the average practitioner display in this incomparably higher phase of his duties?

It should be the aim of the clinical teacher to emphasise unceasingly the urgency of obtaining the earliest possible indications, omens, or presages of departures from normal functions, especially in children. When this is accomplished the greatest economy is effected—first, in the limiting of suffering and the progress of disease, and second, in protecting the organism from developmental defects. All life is a process of development, but the effects of interfering causes are vastly more forcible and significant in the young. Diagnosis and symptomatology, as ordinarily presented, are adjusted to meet the requirements of well-developed disorders with only secondary reference to the phenomena of onset. There is room for much useful research along the lines of prodromal and initial characteristic morbid phenomena. True it is that some of these early omens are not conclusive, but certain of them are more significant than is generally credited. Certainly greater attention may be well bestowed upon their formulation and emphasis, for here are many of our triumphs or blunders to be made, unless our defects are mercifully condoned.

Diagnosis of the morbid conditions of childhood involves something more than a mere search for evidences of disease. During the period of plasticity numerous influences prevail in all ranks of life to alter normal growth and organic development by which the foundations of constitutional weakness are often laid. These are in great measure preventable, at least in part. It is the duty of the physician to recognise and promptly rectify the evil effects of environment and training and, in so far as possible, of inheritance. Hence it is the most important department of differentiation to possess clearly defined standards of growth, proportion, activities, sensitiveness, functional competence, intelligence, and capacity for endurance. These standards should be the products of wide observation, reading, and experience, among normal as well as abnormal conditions, but unless tempered by judgment of a high order, right conclusions are not assured. It should be the duty of clinical teachers to formulate prototypes which may obtain sure recognition.

A careful presentation of the anatomy of childhood should be always offered ; there is little enough in literature.* We can know little of the nature of childish ailments till these needs are better supplied. No heaping up of scientific facts along the lines of bacteriology, pathology, or symptomatology can compare in practical utility to an equipment in applied physiology based on comparative embryology.

As physiology is generally taught it serves a limited purpose, but when once the student realises that practical thinking in pediatrics can only proceed from a use of the principles of embryology our concepts will be clearer.

The standard of the pediatrist is the ideal child, a composite picture of normal children, and cannot be formed too carefully nor from too thorough an interpretation of the data at his command. Next to the ideal child the diagnostician must erect for himse examples of permissible variants. In considering the broad subject of disease in the young, at least in America, we must not limit ourselves to childen of pure Anglo-Saxon stock, but hold in view the many other racial characteristics with which we are likely to come in contact.

Again, there are the crosses of Latin, Celt, Slav, German, Hebrew and other white races, also the hybrids of red, yellow and black races. Our citizens present many complications through lapses from homogeneity by reason of inevitable fusions due to the march of conquest and colonisation which are growing more numerous daily. These modifications exhibit laws of their own, as yet by no means clear, but deeply significant.

Inheritance of tendencies is recognised as a potential factor by most authorities. The dynamics of inheritance are denied by some but must be reckoned with. Where doubts obtrude upon the mind of the clinician, as they inevitably must, the safe course is to read the latest teachings on the subject of inheritance and heredity and sift out the acceptable conclusions.

Predisposition to disease is an obvious factor, admittedly potential for harm.

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* Among the best are those of George McClellan, Symington and J. W. Ballantyne. There is no systematic physiology of childhood in English. Scattered facts exist on both these subjects, but they might be better related.

Hence it is desirable to consider variants of types, and peculiar and exceptional children. Difficulties of diagnosis are many enough among children normal in structure, in neural balance and in mind, but these grow greater where constitutional variations or deviations are present. The normal processes are profoundly modified by peculiarities of temperament, inherited or acquired. This subject would demand, for full consideration, much space, but it will suffice here to roughly outline the salient points. The most valuable and suggestive literature I have found is that which emanates from the studies in childhood psychology instituted by G. Stanley Hall. An article by E. W. Bohannon covers the ground sufficiently to warrant the use of his classification, and though the study is more psychic than physical it is most helpful. The psychic factor as stated demands deeper attention in clinical medicine, especially among children, than it ordinarily obtains.*

The number of those studied was necessarily limited, but covers over 1000 individuals, enough to formulate from it certain types of mental and physical conformation. These types are the heavy, the tall, the stout, the small, the strong, the weak, the deft, the agile, the clumsy, the beautiful, the ugly, the deformed, those with birth marks, the keen and the mentally precocious, those with defects of sense organs or mind, the nervous, the clean, the dainty, the dirty, the orderly, the obedient, the disobedient, the disorderly, the teasing, the buoyant, buffoons, the cruel, the selfish, the generous, the sympathetic, those with imagination, the liar, the ill-tempered, the silent, the dignified, the frank, the loquacious, the inquisitive, the courageous, the timid, the whining, those temperamentally "spoiled," the gluttonous, and the "only child in a family."

Many of these types overlap; several are liable to include similar features—are, in fact, composites of the types, making the study most complicated if carried to legitimate conclusions.

A review of Bohannon's findings and conclusions from the observation of this large group reveals much of practical interest to the clinician. It is manifestly impossible to discuss all, but a few words about those types in which the physical features are dominant will prove of value. As to general health and mental ability there appear good reasons for believing that the larger children, except the extremes, are superior to others. But it must not be forgotten that there are pathological cases in the group, especially in those showing marked departures from the average.

* A recent book by G. Stanley Hall on 'Adolescence' deals at length on these subjects.

Leaving out of account possible tendencies to acromegaly or myxœdema, they lean to a too early maturity. They are generally even-tempered.

Small children evidence delayed development. The less vigorous show degenerative phenomena; many are "delicate, ugly, deformed, or vicious, dull, mean, or spiteful, and tend toward morbidity." The strong children, while exhibiting many admirable qualities, are likely to be aggressive, harsh, coarse, rough. More is expected of them, hence they are often exhausted by work; their offences are the result of excessive, often explosive, energy. The weakly children are likely to show pronounced evidences of degeneracy; often they are ugly and deformed, cruel and mentally deficient. Inheritance was not so frequently a recognised cause as parental follies, especially during the embryonal period. Temperamentally they are usually unfortunate.

The deft and agile show better health, yet are undersized. Clumsiness is found due to two causes: first, want of development of the mechanism which governs the accessory movements; and second, excessive inhibition of this same mechanism together with lack of emotional balance.

Ugliness is usually accompanied by many evidences of degeneration, physical and mental; in the deformed these deviations are even more decidedly present. Deformities are largely *ipso facto* manifestations of deviation, defects of central development exhibiting anatomical and physiological faults, some of which are remediable. Under good care many of these improve greatly, some becoming fine adults. They are found to be treated with amazing lack of consideration by parents and associates, hence they suffer in temperament.*

Among those showing defects in mind, sense organs, and speech, there is much to indicate a general degeneracy. They are morbidly retiring, dependent, and lack symmetrical development in part due to original defects and deficiencies in normal stimulus.

Those children grouped as "nervous" exhibit delicacy and instability of constitution; they lack size and vigour, are timid, sensitive, and changeable, disposed to be irritable and meddlesome, lacking in control, hence untruthful. The extremely over-dainty and the distinctly dirty each excite suspicion of abnormalities. Buoyancy and teasing both indicate excess of energy, as also of cruelty; but here ancestral traits seem manifested.

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* Boys are more liable to deformities than girls. Warner's 'Studies of London School Children' showed that the proportion of physical anomalies of boys was 8·27 per cent. to 6·78 per cent. in girls. Again, according to Newsholme ('Vital Statistics,' p. 61), the males outnumber the females in still-births, probably owing to greater difficulties at birth. Thus in ten years (1865–1875) there were in France 144, Italy 140, Belgium 135, and in Prussia 129 male to every 100 female still-births. This seems to throw light on deformities incident to difficulties in labour; thus, also, intra-uterine disturbances are much more likely to occur with boys than girls (Bohannon).

Lying and imaginativeness are allied, and point to lack of self-control or selfish imitation; the associated traits are disobedience, ill-temper, thieving, and bad health. Those who are peevish, untruthful, discontented, are usually of delicate growth and evince instability and poor vitality. Those who are loquacious, voluble, and inquisitive lack powers of inhibition.

Courageous children are usually healthy and strong in mind and body. Timidity has a physical basis, but may be acquired from bad environment. The "only child in the family" in 66 per cent. shows disadvantageous traits; the only child is usually of poor health, lacking much of normality, both mental and physical.

The "youngest child," the "only boy," or the "only girl" displays many striking resemblances to the "only child." The value of such conclusions from a statistical study is very great, especially when it is noted that the writer set out with the expectation of arriving at conclusions, in many directions, radically different.*

In the examination of children, next to a trained observation, the most necessary item of skill lies in palpation. Extensive experience is needed to acquire this. Long years are not so efficacious as the conscientious use of every opportunity offered. Tactile sensibility grows rapidly if undivided attention is given to a few cases; a large number is still better, but carelessness and a habit of guess-work are liable to follow excessive practice. Estimation of resistance, the tone of tissues, skin and subcutaneous structures, conditions of over-contraction or relaxation, temperature, and the like, are often of deeper significance in the infant than in the adult. Size and relationship of abdominal organs can thus be more accurately learned than by percussion, which, in the very young, is of less than secondary importance, indeed, often misleading. The left hand in right-handed persons should preferably be trained in tactile acuteness. The hand should be laid down quietly and gently flat upon the part with a lingering touch, permitting an appreciable amount of time to elapse for sense impressions to grow and become deliberately interpreted, imitating the methods of the blind. Much can be thereby learned not readily reducible to language yet helpful to conviction. Pure touch is suggestive, but a combination of contact and manipulation, supplemented by slow, tactful, pressing and relaxing, reveals far more. So much concerning the areas usually explored by palpation, such as the abdominal and thoracic viscera; but much can be learned by the hand applied to all parts of the body, a method too rarely practised by physicians, and not thoroughly by some surgeons, whose examination often involves less thoroughness than it might.

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* It is impossible here to review Bohannon's 'Interpretation of Data,' but this is highly recommended to those who would get a fair idea of inheritance and heredity, both of physical and psychic traits. (See 'Pedegogical Seminary,' October, 1896.)

The consistency of the skeletal structures, particularly those adjacent to the vertebral column, will afford evidence of great value later to be defined. A highly significant phenomenon is the quality of resistance in the muscles, such as those of the neck, in many conditions, both physical and psychic. Few children are too young to betray at some time or other muscular rigidity, transient or protracted, yet significant of alterations in tissue from lymph stasis, nerve irritation, or psychic exaltations or depressions. The educated hand is not employed to the extent it deserves in the search for collateral data in organic disturbances, and particularly where, as is common, the psychic state has contributed to produce excessive tensions or relaxations.

In adults, emotional disturbances often produce conspicuous hypertension gravely affecting the continuance or exaggeration of lesser physical derangements, which are happily often relievable, mainly by teaching the sufferer to let himself go and to relax. To a less, but appreciable degree, this obtains also among children and cannot be ignored. In acute diseases one often finds that pain is present, local or general, not so severe as to cause a cry, perhaps, but merely altered sensitiveness beyond the degree of discomfort. Manipulation—especially gentle pressure—often relieves this to the extent that the symptoms are modified, sleep follows, temperature drops, etc.

Abdominal organs frequently grow tense from gaseous distensions, and skilful manipulation often relieves this when applied over the distressed area, or by gentle pressure over the lower dorsal or lumbar region; muscles may ache, nerves become tender from retained toxins, and thus the limbs or back, but especially the deep structures of the back or neck, become hypersensitive to pressure, and contractures arise.

Again, the varying psychic states of children fail to receive the attention they merit, yet upon them much may depend, and stand revealed only on palpation.

It would seem admissible to state that few or no pathological processes can exist in the body without manifesting themselves by disturbances of the nervous mechanisms of the area or parts involved.

These are brought about by changes in the circulation of the central nervous system. A large part, by far the greater proportion, of the nervous mechanisms of the body are located in the spinal cord. Again, disturbances of the circulation in the spinal cord have been found to be expressed externally by alterations in the conditions of the tissues supplied by the posterior primary divisions of the spinal nerves, as well as in the peripheral parts diseased.

A recent and most important contribution to the study and elucidation of disease has been made by John P. Arnold, and published in the 'International Medical Magazine.' As Demonstrator of Physiology in the University of Pennsylvania, he made special researches on the clinical significance of the co-relation between the blood supply of organs and their functional activities, and claims to have systematised our knowledge of the vaso-motor mechanisms. This method of diagnosis is based upon rational physiological principles of much utility, not only of and for itself, but confirmatory of data gained through other avenues.

Frequently by this method much can be learned more helpful in outlining treatment than through any other sources, because it is explanatory of the character of the derangement and on broader principles supplements facts learned otherwise.

He points out that there is a compensatory relationship between the circulation in the tissues of the back, lying adjacent to certain areas of the cord, and the circulation in the local segments.

Elaborating these observations, he has been able, not only to modify acute and chronic ailments, often to an extraordinary degree, but has also evolved a system of diagnosis. This last is so helpful that, when perfected and amplified by clinicians, it seems destined to offer a more exact and yet simple means of estimating the nature and extent of derangements than is offered by many of our commonly accepted means of physical exploration, as well as supplying important therapeutic possibilities.

Thus the phenomena of disease are studied from the standpoint of the central nervous system and not only from peripheral phenomena.

This department of symptomatology is still in its infancy, and even in the hands of enthusiastic experts can as yet only reveal indications. More accurate specifications and gradations can be reached in proportion to the personal equipment of the observer in physiological knowledge and the natural history of disease. When clinical phenomena shall be interpreted more closely along physiological lines and this principle recognised and employed by a larger number, we may expect records of refinements and exactitudes revealing many facts hitherto unattainable.

The principle on which this system of diagnosis is founded is the well-established fact, familiar to physiologists, but not yet applied by clinicians, that an interpretation of the viscero-motor and other activities must be sought through a comprehensive knowledge of the vaso-motor mechanisms and the spinal segments from whence a viscus is controlled.

Much importance is ordinarily attached to the agency of the sympathetic nervous system. When, however, it is borne in mind that this system is a mere outgrowth from, and entirely secondary to, those centres in which impulses are initiated and controlled, we must approach the subject of organic and other derangements with the significance and responsibility of the centres in the cord and in the various segmental combinations kept constantly in view. The prevailing belief as to the source of the functions of the sympathetic system is well illustrated by M. Duval (Sajous), who says: "It is now recognised that most of the nervous phenomena of the visceral functions have the spinal cord for their centres, and that even for their vaso-motor functions the sympathetic nerves utilise only borrowed power originating in the upper portion of the spinal axis; the same obtains in respect to their influence upon the heart, and also with most visceral reflexes the centres of which are in the cord; so that even the expression 'sympathetic system' to-day means nothing."

Further, effects upon the blood supply of all parts of the body can be produced by influencing the centres in the spinal cord more directly and simply, and through them exerted upon the sympathetic centres and ganglia, than from measures directed to the organs disturbed. *Per contra,* disturbances in the various organs, systems, and tissues being due to circulatory changes induced reflexly from the central nervous system, the major portion of the nervous mechanism being located in the spinal cord, disturbance of the circulation in the cord is expressed by alterations in the structures of those parts supplied by the posterior primary divisions of the spinal nerves, as well as of the parts affected.

It is, then, to be inferred that local changes will also be manifested in the tissues of the back adjacent to the vertebral column. During the continuance of diseased states, or lesser disturbances, pronounced alterations are to be observed in those tissues immediately innervated by fibres arising in the spinal segments whose integrity is disturbed by derangements in function of organs and areas dependent upon those segments. In brief, there is both a nutritive and sensory reaction exhibited upon the erector spinæ muscles and allied structures, caused by the disturbed circulatory equilibrium in areas depending for vaso-motor regulation upon certain groups of segments of the cord. There is, as has been said, a compensatory relationship existing between, first, the surface muscles and the skin supplied by the posterior primary divisions of the spinal nerves; and second, the blood-vessels of the cord and deep structures, organs, and remoter parts innervated by fibres whose cell-bodies arise in that region of the cord.*

Almost nothing is to be found in the literature of clinical medicine which directs attention to the varying conditions of the structures of the back. Orthopædic surgeons seem to confine their observations chiefly to the gross conditions of the ligaments, muscles, and bones. Neurologists take little account of the status of tissues, other than those showing alterations in motor and sensory states. Irregular practitioners of one type and another have, from time to time, attached much significance to the status of the ligaments and attitudes of the vertebræ. "Dislocation of the bones of the back," as a common cause of the functional derangement, is not for a moment to be accepted. The highest authorities on anatomy state that except when long-standing or progressive morbid processes have been the cause, as in aggravated "lateral curvature" or tubercular disease, changes in relationship of the vertebræ are practical impossibilities. Relaxation of the lateral and posterior spinal ligaments, due to nutritive faults, produces often the appearance of dislocation, but these phenomena disappear on restoration of the tonus of the shrunken tissues, chiefly through mechanical stimulation.† Thus, any agent which causes vaso-constriction in the tissues of the back contiguous to the spinal column will produce, conversely, dilatation of the vessels in the cord and of the organs and parts beyond in the line of innervation.

Any agent which produces dilatation of the vessels supplying the tissues of the back will, by compensatory action, induce constriction in the blood-vessels of the cord and parts beyond.

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* The spinal cord viewed from the embryologic standpoint is a cylindrical tube of nervous tissue made of the fusion of bilateral ganglia in some of the lower worms. This view of the spinal cord is essential to the proper concept of the nervous mechanisms in man and the higher animals.

† Attempts to "replace" these so-called "dislocated bones" and to relieve pressure on nerves, the creed of the osteopath, sometimes result in benefit, not by accomplishing the object aimed at, but through the effects wrought upon the centres of vasotonus and lymph activities by mechanical or other stimulation. Where, as sometimes happens, undue force is used to "pull or push" these tissues in place, harm is often wrought of which little is said, or to which other causes are assigned.

The significance of this is at once made plain, and its value, not only as a factor in diagnosis, but in treatment, manifested.

The element of doubt which can be urged against this view is not whether the especial conditions to be described actually exist, but whether they possess practical importance in diagnosis.

High physiological authorities can be cited to prove the first; but whether this alteration in the status of the vaso-tonus can be demonstrated to such an extent as will produce any practical results in either the muscles, or more potently, in the functional activities of the organs and peripheral parts, depends upon the evidence of clinical results. This is amply demonstrated to those who have studied the matter.

It is plain to the perceptive hand that these muscles are so affected, and according to definite laws of innervation which show conclusively where certain organs or parts are deranged, the corresponding muscles do show these changes. Again, where these muscles exhibit characteristic changes there are assuredly derangements in the organs and tissues corresponding to the centres of innervation.

Again, in the normal individual these compensatory conditions are not so conspicuous, but where there is a definite derangement the evidences are obvious and clearly demonstrable, and most helpful in diagnosis.*

Dr. Arnold formulates certain generalisations which are to be noted upon careful examination and palpation of the back. On inspecting the back of one who is, and has always been, perfectly sound, there will be seen (if certain attitudes are assumed to bring them into prominence) the spines of the vertebræ in normal alignment, distance apart, and degree of posterior projection. If there has been a history of long-continued or recurrent disturbances of the internal organs, these are frequently revealed by alterations in the tonus of the blood-vessels of those muscles and other tissues innervated by, or lying adjacent to, the governing segments of the cord from which the organs at fault are reflexly controlled through their vaso-motor connections. The change of form exhibited is an atrophy of some, infiltration and thickening of others, and if long continued, asymmetries of the vertebræ, the spines apparently pointing in different directions. If the lesions have become chronic, the spines are found separated owing to relaxation of the posterior ligaments, until between two or more marked depressions appear, or several are depressed below the normal line of projection. This disarrangement of the vertebræ is more apparent than real, the asymmetries being due to loss of tone and relaxation in the supporting ligaments, and this disappears under appropriate treatment. In children, even very young ones, these phenomena are readily noted, as has been done for two winters in my clinic at the Children's Hospital, where certain fourth-year students, besides my assistants, usually four in number, have acquired much dexterity in detecting these changes.

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* It must be said, however, that unless the observer possesses more than the average tactile acuteness nothing will be noted except certain gross infiltrations or atrophies. Persistence will be rewarded by soon achieving skill and much satisfactory information.

The examination of the patient should be made while lying on the side and facing the operator, with the head slightly elevated on a pillow and all the limbs so arranged as to secure the utmost relaxation of the tissues of the back. The palpation is made by the cushions of the examiner's fingers lightly placed over the structures next to the line of the vertebræ. He draws them lightly from and toward the vertebræ for an inch or two, rolling the muscle fibres under the hand, and carefully estimating their density, elasticity, and separability, with just enough pressure to determine resistance and sensitiveness. After palpating the entire length of one side of the spinal column the patient is turned on the other side, and the examiner again facing the subject, the corresponding tissues are studied in the same way. Finally, the patient assuming the dorsal decubitus, the examiner stands at his head and the lateral and posterior tissues of the neck receive attention.

In most acute conditions and exacerbations of chronic states there exists more or less hypersensitiveness in the tissues adjacent to those segments of the cord corresponding to the areas in which there is disturbed innervation. Alterations are found also to an even greater extent in the muscle-fibres, due to infiltrations, thickening, etc., producing a cord-like condition which slips back and forth under the palpating fingers in a manner resembling tendons or muscles in tension. In places also the structures will occasionally be found to have lost tone to such an extent as to feel like dough, or through atrophy may seem absent in acute conditions, like catarrhal disorders of the mucous membrane of the head, stomach, intestines, bronchi, or of the genito-urinary system; the tenderness is often marked in certain definite regions, disappearing promptly as recovery follows. During the progress of pneumonia and bronchitis the tenderness is rather less, but the infiltrations are perhaps greater. In acute disorders of the genito-urinary organs moderate tenderness is observed over the lumbar areas, and especially over the sacral nerves.

These sensory phenomena are less common in children than in adults if pain is a feature of the malady, and gentle pressure over the tender spot, at first disagreeable, soon produces relief and is welcomed, in some states relieving the pain and discomforts markedly and promptly. So in acute disturbances of the throat, nose, and larynx, in addition to the sensory disturbances, changes in resistance in the upper dorsal areas are noticeable, as well as in the muscles in the back. Personally I am not as yet confident enough of my observation to specify the precise significance of all the changes noted, because there is much individual skill required to differentiate or interpret findings, but have already derived much practical information by this means, and as my skill grows regard it with increasing favour.

To make use of this method of diagnosis requires a systematic reading of clinical facts in the light of broad physiologic principles. Since few students are adequately grounded in this it requires a readjustment of knowledge and careful study of the borderland of physiology and pathology.*

In a personal communication, Dr. Charles Lester Leonard has given a *résumé* of the diagnostic possibilities of the Roentgen rays in disease of childhood.

The Roentgen rays have found many valuable applications in the diagnosis of children's diseases. The skiagraphic method is of course more accurate than the fluoroscopic, since it introduces less of the personal equation. The fluoroscopic method is, however, particularly adapted to the examination of children, as they are more readily agitated. It finds its greatest value in detecting abnormal movements, or absence of movements, such as restrictions of respiratory action in the diaphragm. This restriction in motion is seen, for example, where the normal capacity of the lung is altered, either by congestion, consolidation, abscess, or pleuritic effusion. It also determines the location or attitude of organs as the darkened area contracts sharply with the normal lung, which is less opaque, and alters with inspiratory movements when the greater mass of air makes it appear more translucent. The more accurate detail afforded by the skiagraph is essential in locating accurately abscesses in the lungs and circumscribed pleuritic effusions. It also affords a better idea of cardiac enlargement. In purely medical conditions the results are a distinct addition to our methods of making a diagnosis. In surgery it has, however, afforded more accurate information than can be obtained by other means. Thus, the exact extent and character of congenital bone defects, or malformations, is determined, and they are differentiated from pathologic processes, as coxa vara from coxalgia, while congenital dislocations resulting from coxa vara are easily differentiated from simple congenital dislocations.

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* Few text-books are built on these plans. The best avowedly so constructed with which it has been my good fortune to meet is Lazarus Barlow's book on "General Pathology."

The contrasts afforded between diastases, dislocations, and fractures is also of greater utility. The ability to detect renal, ureteral and vesical calculi is a marked advance in precise diagnosis. The exact size and position of the calculus can be thus determined without passing a sound or subjecting the patient to any chance of infection. These calculi can in this way be detected as soon as a suspicion points to them and before they have done irreparable injury and before the symptoms have become so marked as to be otherwise readily determined.

TWO CASES OF STRANGULATED HERNIA IN INFANTS.

By Leonard A. Bidwell, F.R.C.S.,
Surgeon to the West London Hospital.

Cases of operation for strangulated hernia in infants are of interest, as they are rarely met with, and in the absence of records of a number of successful cases, a surgeon would be disposed to give a very grave prognosis when called upon to perform herniotomy in a baby under a month in age. Strangulation is certainly rare at an early age, and thus remarkable when we consider the very large number of infants who suffer from hernia. I do not propose to enter into a *résumé* of the published cases of operation, as this has recently been done in the excellent paper read before the Society for the Study of Disease in Children by Mr. Clement Lucas, in October 1903. Since the appearance of that paper two cases of successful operation in infants under a month in age have also been reported by Campbell in the 'Lancet' of January the 9th, 1904.

One of the reasons for giving a grave prognosis in operation for hernia in infants no doubt was the fear of sepsis, since it was impossible to prevent the wound becoming fouled by urine when large dressings were employed. By applying a very small dressing and fixing it on with collodion, and over this placing, but not bandaging, a pad of wool, which is changed constantly, one can insure the asepsis of the wound.

The following are the two cases on which I have operated :

Case 1.—On July the 10th, 1901, I was asked by Dr. Hope of Hanwell to see a male child, aged 19 days. It was a healthy baby, and did not cry. On July the 8th his little brother had placed both hands violently on the baby's stomach, and on July the 9th a swelling was noticed in the left groin. The bowels acted on that morning but not afterwards. The infant vomited several times during the night and once in the morning. When I saw the child it looked very ill, with sunken eyes, and a distended abdomen. There was a hernia in the right inguinal region which was irreducible, and with no impulse on coughing. It was very tense, and did not diminish in size on applying a moderate amount of taxis. The patient was given chloroform, and gentle taxis again attempted, without any effect ; so an incision was made and the sac opened. It contained blood-stained fluid and a knuckle of distended gut, which was chocolate-coloured and had some lymph on its surface. The neck of the sac was divided, and the gut reduced with some difficulty. The sac was ligatured, and some stitches placed in the inguinal canal. The wound was covered with a collodion dressing and healed by first intention. I saw the child about a year later, and it was in perfect health.

Case 2.—On the evening of March the 8th, 1904, I was asked by Dr. Whitehall Cooke, of Crickelwood, to see a male infant, aged 22 days, with a strangulated inguinal hernia. The child thrived well for the first fortnight, but had cried a good deal during the last week owing to improper feeding. On the evening of March the 7th a lump in the right inguinal region was noticed, and the infant vomited after every bottle. There had been no action of the bowels. The baby was pinched and looked very ill ; the abdomen was not distended ; the lump in the right inguinal region was very tense and there was no impulse on the baby crying. The skin over the swelling was reddened in consequence of intertrigo. There was no diminution in size after gentle taxis. The infant was accordingly given chloroform and another attempt made to reduce the hernia by taxis. Very little effect was produced, so an incision was made over the swelling and the hernial sac opened ; this contained blood-stained fluid. The gut was dark in colour, and there were some flakes of lymph over it. The peritoneal covering of the gut had lost its shine in parts. The neck of the sac was divided and the gut reduced. The neck of the sac was obliterated by a purse-string suture, and the canal was closed with two silk sutures. The wound was covered with a collodion dressing, and healed by first intention. The child made a perfect recovery.

The only point which I should urge is that we should not give a bad prognosis in cases of strangulated hernia in infants, and consequently that we should not waste time by trying taxis or other methods to reduce the bowel, but should operate as soon as the diagnosis is made.

Although the infants are usually very collapsed before operation, the recovery is rapid and satisfactory.

FEVER AND FEVERISHNESS IN CHILDREN.

By Charles W. Chapman, M.D., M.R.C.P.,

Senior Physician to the Hospital for Diseases of the Heart; late Physician to the Farringdon Dispensary.

It is recognised by a large section of the profession that the present scheme of medical education precludes the student from gaining a familiarity with the beginnings of disease which was the common knowledge of those trained under the former system of pupilage under a general practitioner. This is especially true as regards the more common ailments of children, which occupy a large part of the routine practice of the family doctor. There is no surer road to professional success than that opened up by knowledge of diseases of children, especially those met with in every-day practice. The awakening of the profession to this hiatus in medical training is seen by the phenomenal success of the Society for the Study of Disease in Children and of the 'British Journal of Children's Diseases.'

I am not now, however, concerned with what may be termed the curiosities in children's diseases, which are fitly discussed at the meetings of the Medical Societies, but some of the every-day problems, and I propose on the present occasion to consider fever or feverishness in the young child.

I would strongly insist on the futility of using short cuts in making a diagnosis of apparently trivial illnesses in children. The public are only too ready to find their own explanation of a child's indisposition, and this vanity is fed by a too ready concurrence of the doctor. Take for instance "the teeth." I suppose every illness has been attributed to teething, yet dentition is a normal process which, if a child is healthy, need not cause any concern.

Contemporaneously with dentition is the development of the nervous system, and similar developmental changes occur in digestive organs preparatory to the reception by the stomach of food other than milk. During this period these structures are particularly sensitive to all forms of irritation. It is not, therefore, surprising to find fever, convulsions, sickness, and diarrhœa common in infants cutting their teeth. All or any of these symptoms may be, and frequently are, caused by a chill to the surface of the body from insufficiency of clothing, or are due to an error in diet. It is obvious that the treatment of infants whose illness has been caused in the manner described, much valuable time will be lost if the attention of the doctor is centred entirely on the state of the gums.

It is to be borne in mind that acute illnesses may occur during the dentition period, and that the fever which then occurs is totally unconnected with teething. The rule should be not to credit "the teeth" with being the *fons et origo mali* until every probable cause for the fever has been eliminated. It is true that occasionally an erupting tooth is the cause of both fever and symptoms traceable to reflex irritation, and that when the gum has been lanced relief follows. But even here it is not opposition to an advancing tooth by the gum that has been removed by an incision that has done the good, but the division of a stretched nerve filament.

Tonsillitis is a frequent cause of fever in children, the recognition of which will explain many cases of pyrexia otherwise difficult to account for. The throat should be examined as a matter of routine in all cases of feverishness. By so doing the presence of one of the exanthemata and inflammation of the pharynx may be detected. The recognition of tonsillitis is especially valuable as indicating a rheumatic tendency. Many cases of organic heart disease that have come under my notice have had their rheumatic history limited to attacks of tonsillitis. And further, cases of acute articular rheumatism frequently occur in patients who have previously had tonsillar inflammation. In connection with this part of our subject the importance of keeping the throat and especially the tonsils in a healthy state cannot be too strongly insisted upon. Unhealthy tonsils give the open door to numerous diseases, such as diphtheria, rheumatic fever and scarlet fever, etc.

Gastro-intestinal irritation is a frequent cause of the condition under consideration.

The frequency with which children of all ages suffer from taking food unsuitable in quality or excessive in quantity is early borne upon the practitioner, but some of the less obvious of the consequences of such feeding are not always recognised, and are thus a source of anxiety to the doctor inexperienced in pediatries. It is surprising how the temperature will run up and the infant have convulsions simply from the irritation caused by a few undigested curds, only to fall as rapidly to normal when the peccant material has been got rid of. A somewhat similar state of affairs occurs in children beyond infancy, owing to the stupidity or carelessness of those in charge of the nursery. I may here relate a case which occurred early in my professional career. A girl of about two years of age was suffering from intestinal catarrh and delirium at night. She was in charge of an experienced nurse, in whom the parents had the fullest confidence. Moreover, the child was the subject of special solicitude from her mother, who saw all the food prepared. My inquiry as to the possibility of anything improper having been given to the patient was met by an emphatic negative. I, however, insisted that something was irritating the child's bowel. A dose of Hydrargyrum cum creta, followed by castor oil, brought away about four inches of the rind of boiled pickled pork. The nurse then confessed that she had given the rind to the child to suck, and that it "had slipped down all in a moment." This child had been ill for several days and it took several more to restore the digestive organs to their normal state after the offending material had been cleared away.

Feverish attacks after children's parties are more common and often of graver import than they were a few years back. This I attribute to the pernicious custom of having the refreshments supplied by contractors, in the place of wholesome and simpler food prepared at home. The age of some of the dishes must be that of many days, for not only have they done yeoman service at previous suppers, but those unconsumed will appear somewhere else to-morrow. There is, moreover, a temptation to use tinned lobsters, and other preserved foods, which rapidly produce ptomaines if not used quickly.

I have already remarked on the effect of insufficient protection of the abdomen and legs from cold on the digestive organs, which I am confident is not sufficiently recognised. The throat and chest are muffled up to any extent, but the diaphragm marks the line of defence. Improvement may often be witnessed in chronic indigestion in young children on the adoption of proper clothing when dietetic and medicinal measures have failed.

In connection with this part of our subject it may be well to call attention to the diagnostic value of the odour of the breath in sick children. It is impossible to put into words the various breath odours that are suggestive of different morbid conditions in children, as this knowledge can only be gained by observation and experience. There is one variety, which I have been accustomed to describe as a fermentative smell, which goes with chronic gastric catarrh, which is very common.

The subject of fever in children is a large one. One further instance only can be given on the present occasion.

Broncho-pneumonia and pneumonia.—It is true the former condition is the more frequently met with in children under five years, but the latter is by no means uncommon. I remember being asked to see in consultation a case of brain fever in a child aged 3 years. I was informed that the parents had been told it was impossible for the child to recover, as the delirium had become severe. Examination showed that the right lung was practically solid from pneumonia, from which the patient happily recovered. The kind of case I wish to draw attention to is that of an infant or child during the first three or four years of its life, who has a temperature of anything up to 100–102° F, and even higher, which ordinary examination will not account for. The mother will sometimes say, "My children always cut their teeth with a cold." In such a case very careful percussion will detect an isolated patch of impaired resonance and auscultation will reveal a small area of fine crepitation. The auscultation must be gone through inch by inch, or a patch will be missed.

A few words as to treatment. Fever being a symptom rather than a disease, every effort should be made to discover the underlying cause of the pyrexia. When this latter is a dietetic error a mercurial aperient, suitable to the age of the child, should be administered. If the temperature is reduced to normal when the bowels have been cleared the child should be kept on bland food for the next few days. Generally speaking, convalescence will be assisted by giving gr. 2-5 of bicarbonate of sodium with rhubarb if the tongue has not cleaned, or carbonate of bismuth gr. 2-3 when gastric irritability and redness of the tongue are present.

A CASE OF ATAXY OF THE CEREBELLAR TYPE PROBABLY DUE TO A LESION IN THE NEIGHBOURHOOD OF THE CORPORA QUADRIGEMINA.

By J. Porter Parkinson, M.D.,
Physician to the North-Eastern Hospital for Children, etc.

This patient, a girl aged 11 years, was brought to the hospital on account of difficulty in walking. She is the youngest of four children, of whom all the others are healthy. The mother is healthy and has had no miscarriages. The father is also in good health. At the age of 2½ years this girl had measles and whooping cough, and she has always been subject to "bilious attacks," but has had no other illness. About the age of 7 years she was noticed to totter and stagger when walking, and this has been getting worse each year. For the past three or four months the sight has been gradually failing, and she was unable at times to see objects when going from a bright room into a darker one. She has not suffered from headaches.

On admission into the North-Eastern Hospital for Children in October, 1904, her condition was as follows: She was thin and rather small for her age, the expression of her face was dull and her intelligence was not up to the average, and she was exceedingly emotional. She could walk with difficulty, the feet being placed too wide apart and coming down on the heels in an uncertain manner, she staggered a good deal, but not in any particular direction, and the head was generally bent forward, the eyes looking at the ground in front of her feet. She could not stand with the feet together, but when they were separated she was able to retain her balance with the eyes closed. There was marked inco-ordination in the movements of the hands, fingers and arms, and some was evident in the trunk movements, though she could sit unsupported. The muscles were small, but there was no wasting, spasm, or tenderness. The deep reflexes were increased in both legs and arms, but there was no ankle clonus. The patellar reflex was distinctly extensor in type. There was no rectal or vesical trouble, and no sensory changes.

The cranial nerves seemed normal, with the following exceptions: The ocular movements were distinctly impaired, and the hearing in the left ear was slightly impaired. For the examination of the eyes I am indebted to Mr. Sydney Stephenson, who reports as follows:

Pupils medium size, react sluggishly to light and accommodation.

Vision under atropine: R. and L. $\frac{1}{24}$; No. 14 J.

The upward and lateral movements of the eyes are limited, especially in the former case.

Ophthalmoscopically in both eyes the retinal vessels are of good size, and their coats show no sign of degeneration. Both fundi are mottled all over with small blackish patches of choroido-retinitis, and the disc of the left eye is practically encircled by an area of choroidal change. The discs are somewhat pale, and there is no evidence of optic neuritis. The condition of the fundi is such as is not infrequently found in cases of hereditary syphilis.

The speech is slow, hesitating and somewhat slurred.

From the length of history and progressive character of the symptoms it seems clear that we have to deal with a degenerative lesion, and it is very probable that this may be the result of hereditary syphilis, though there is no sign of this in the patient except the eye changes, and no evidence of it can be obtained in the family.

This degeneration is probably, as usual, widespread, producing the mental symptoms which are present; but in addition there are symptoms suggesting a special focus of disease in the neighbourhood of the corpora quadrigemina, which are identical with those formulated by Nothnagel* as indicating disease in this region, viz. an unsteady reeling gait appearing as a first symptom, associated with which ophthalmoplegia in both eyes, not quite symmetrically and not implicating all the muscles in equal degree. In addition to these diagnostic signs mentioned by Nothnagel there are the increased reflexes in the upper and lower limbs which are also generally found in lesions of this part of the nervous system.

The case presents many features in common with the cases of cerebellar ataxy described by Marie; but this latter usually occurs in several members of a family, begins at a later age, generally about twenty, and ophthalmoplegia is not common, though it is occasionally seen.

A case the symptoms of which resemble most nearly the one I have detailed was described by Dr. Frederick Taylor in 1893 before the Clinical Society.† It affected a boy aged 4 years, and the eye symptoms preceded the ataxy, and the duration was only six months, as the lesion was a gliosarcoma affecting the corpora quadrigemina, the cerebellum being free from disease. Taking my case as a whole, the symptoms seem to point to a diffuse degeneration with a definite focus in the region of the corpora quadrigemina; she is being treated with mercury, without, however, any great hope of improvement.

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* 'Brain,' vol. xii.

† 'Clin. Soc. Trans.,' vol. xxvii.

The Society for the Study of Disease in Children.

A SPECIAL meeting for the discussion of the subject, "Sudden and Unexpected Death in Children," was held at No. 11, Chandos Street, W., on Friday, December the 16th, 1904, Dr. FREDERICK TAYLOR in the chair.

Dr. C. J. MACALISTER (Liverpool) opened the discussion on the causes of sudden death in children due to organic disease, and dealt mainly with fatalities which appeared to be due to toxic influences. He quoted several examples in his own experience, where children, sometimes with hardly any prodromal symptoms, in other cases with but a few hours' suffering from headache and diarrhœa or vomiting, had died from asphyxia. He considered that these examples were probably due to a poison which exerted its influence upon the respiratory centre. In the institutions in which these deaths had occurred collective bathing was frequently in vogue, and he suggested that the water, which was saturated with organic matter and organisms, was the cause of the fatalities. In one school where this method of bathing was altered these unexpected calamities had been stamped out, and the general health of the children had greatly improved. He narrated a case of sudden death in an infant who had previously been healthy, and he ascribed this type to infantile paralysis attacking the centre for the vagus, a suggestion which had also been made by Buzzard long ago. He gave other examples of death from toxæmia, and a death from hæmorrhage from the carotid artery was also recited as having complicated scarlatina. In conclusion, he pointed out that some cases which had been thought to be simple diarrhœa or some unimportant febrile disturbance had died suddenly, and had proved to be examples of enteric fever, and he mentioned also examples of sudden death following diphtheria, and occurring in fulminating smallpox and in gangrenous varicella.

Dr. J. PORTER PARKINSON opened the discussion on sudden death from functional causes. He observed that the border-line between what is known as organic disease and functional disease is marked purely by the limits of our knowledge and is constantly changing as this knowledge progresses. For example, less than twenty years ago tetanus was considered to be a functional disease, and it is only quite recently that the bacteriology of chorea has been discovered. There can be no doubt that all nervous phenomena are the results of organic changes in the nervous system, and that, therefore, strictly speaking, functional causes of death are non-existent: still, the term is a convenient one to include those causes in which a primary structural change in any of the nerve elements is as yet undiscovered. He thought it was exceedingly likely that, as in the adult so in the child, emotional disturbances might cause sudden death. He gave as an example of this contention the sudden death of a lad aged 7 years, who expired from the excitement of watching a fight between two gipsies. A post-mortem examination was made, and the child's organs were found to be healthy.

Mr. J. W. **Thomson Walker** opened the discussion on sudden death from the thymus gland and the status lymphaticus. He said that the clinical picture presented by these cases could be divided into three main groups. In Group I, no cause could be assigned for the sudden death. In such cases there were no prodromal symptoms, but in others there were more or less pronounced premonitions, and in others the children had previously suffered from repeated attacks of difficulty of breathing, the so-called thymic asthma. In Group II, the children were already suffering from some intercurrent disease—*e.g.* rickets, laryngismus stridulus, or some other malady. In Group III, some definite cause of death could be assigned, but in most cases this was insufficient to bring about a fatal termination in a healthy individual. Death had been ascribed in these children to sudden circulatory failure, or to simultaneous circulatory and respiratory deficiency. Almost all authors described a marked degree of cyanosis, which usually rapidly passed away and was followed by pallor. A small number undoubtedly showed evidence of asphyxia, and some succumbed during a convulsion. Post mortem the characteristic findings were an enlarged thymus, moderate enlargement of the spleen, with general lymphatic hyperplasia, which microscopically in no way differed from the normal. In a small percentage of the cases the thyroid gland was enlarged. Sometimes the heart and aorta were small. Blood-cultures had given negative results. The most prominent theories which had been advanced to account for the sudden death in these cases were: (1) pressure, (2) toxæmia. In regard to the former, the evidence in support of the contention was unsatisfactory. Of the toxic theories there were numerous hypotheses; thus, coagulation of the blood and depression of the heart from the sudden production of an internal secretion had been advanced, but these views were unsupported by evidence. From analogy he considered the lymphatic hyperplasia found in these cases was due to a reaction to chronic toxæmia.

Mr. A. H. **Tubby** opened the discussion on sudden death from surgical causes. He dealt with the subject under the following headings: (1) circulatory, (2) shock, (3) toxæmic, (4) infectious, (5) mechanical, (6) nervous, and (7) rare and unusual causes not included in any of the above sections. In regard to blood conditions he spoke of hæmophilia and the dangers of an unexpected fatal termination incidental to surgical interferences in that condition. He drew attention to unexpected loss of life in sequence to minor surgical operations in infants following a small loss of blood. Painfully sudden deaths occurring during the treatment of nævi by electrolysis and by chemical injections next received attention. In relation to shock the dangers of cold, exposure, and undue delay during operations, the too rapid evacuation of fluid-filled cavities, and the washing out of cavities were dwelt upon. He considered when a fatal termination followed the introduction of fluids into cavities that it was due to the chemical nature of the fluid introduced, which acted reflexly through a sensitive surface upon the cardiac and vaso-motor nerves in the medulla. In regard to toxæmia he drew attention to the dangers arising from the application of chemical poisons and irritants such as carbolic acid and iodoform. Under the heading of toxic poisoning, sudden and unexpected deaths in cases of appendicitis were next alluded to. Infectious conditions, such as acute miliary tuberculosis, were apt to arise in sequence to operations on local tuberculous lesions. He held that the administration of an anaesthetic was responsible in some instances for the diffusion of the tuberculous poison. Under the heading of mechanical conditions the difficulties which arise in some tracheotomised children in inducing them to dispense with the tracheotomy tube and the possibility of a sudden fatal termination in such cases were dwelt upon. Of conditions referable to the nervous system the sudden loss of cerebro-spinal fluid was often responsible for a fatal termination. Among rare and unusual causes might be mentioned the entrance of air into the veins during operations on the neck.

Dr. Leonard Guthrie drew attention to the happening of unexpected or sudden death after the rapid healing of certain cutaneous eruptions of a general character. He was inclined to think there was some ground for the prevalent belief in the harmfulness of "driving in an eruption" as it was called. He also was in favour of treating infantile hereditary syphilis very cautiously with mercury in cases where there was a cutaneous eruption.

Dr. Young from post-mortem examinations was inclined to think that lymphatism was more common than was generally supposed.

Dr. Edmund Cautley in the course of his remarks quoted two cases. One was that of a wasted baby aged 9 weeks, in which the post-mortem findings consisted solely of inflamed agminated glands above the ileo-cæcal valve, together with swollen and enlarged mesenteric glands. The second child was bottle-fed and 9 months old. In this Peyer's patches were enlarged and there were hæmorrhages into the stomach. He also alluded to deaths arising suddenly in cases of marasmus. He did not believe that Dr. Macalister's examples of death from toxæmia were due to the absortion of dirty bath-water.

Mr. George Pernet did not consider the routine doses of mercury harmful in congenital syphilis. The practice of dermatologists was directed to the cure of skin lesions as quickly as possible. He had seen no untoward results from this practice.

Mr. Arthur Edmunds, from his experience in skin-grafting of a case in which an extensive cutaneous area was affected, had come to the conclusion that if a limited checking of free discharge could produce septicæmia, as had happened in his practice, then it was only a matter of degree for it to be capable of producing fatal results.

Dr. Fortescue-Brickdale (Bristol) narrated the case of a rickety child aged 2 years, who was suspected to have an empyema. An exploratory puncture was made in the seventh interspace just outside the scapula. Nothing but blood was withdrawn, and the child, who was sitting up in bed supported by a nurse, became very restless and almost immediately coughed up a little blood. Cyanosis appeared, the respiration became imperceptible, and in about ten minutes' time the patient was dead. No post-mortem examination was made.

Dr. A. J. Alliot (Sevenoaks), narrated the case of a girl aged 10 years, who suddenly expired while running home from school. In the floor of the fourth ventricle and to the outer side of the auditory striæ corresponding to the position of the nucleus of the pneumogastric nerve was a small hæmorrhage, one on each side, perfectly symmetrical. These did not extend deeply, they were not washed off, but they were easily removed by the knife on cutting through them.

The CHAIRMAN (Dr. Frederick Taylor) remarked that the Society had listened to a very interesting series of introductions to the subject, from which one would suppose that every possible phase of disorder had been dealt with in which sudden death might sometimes be expected to take place. It had also been shown that children often did die suddenly. He also alluded to the sudden incidence of death in disease where nothing could be found in the body except the extensive lesions of the disease, which were previously known to be present. He narrated a case of chronic phthisis in a child under his care where death occurred suddenly, the cause being due to the impaction of a pea in the larynx which was found at the post-mortem examination.

Editorial.

ON SUDDEN AND UNEXPECTED DEATH IN CHILDREN.

THE Society for the study of Disease in Children held a special meeting, on December the 16th last, for discussion of the above subject.

Two obvious though not hitherto widely recognised facts were brought prominently forward at this meeting, viz. that sudden and unexpected death might be expected to arise occasionally in every known disease of importance, and that this mode of death in childhood was a not uncommon event, and was relatively frequent in comparison with the total number of sudden deaths occurring at all ages.

The discussion on the above in association with organic disease was opened by Dr. C. J. Macalister, of Liverpool, who narrated several examples where death had occurred in institutions with painful suddenness. One little lad developed a somewhat irritating cough at an entertainment, but was otherwise apparently well. He was dispatched to bed, into which he tucked himself, and was found lying dead there half an hour later; the post-mortem findings were negative. Another lad suddenly developed headache which was followed by sickness and diarrhœa, and the rapid onset of lividity and unconsciousness, and death from asphyxia. Beyond pulmonary engorgement, nothing was found to explain his death. Another boy complained of headache on going to bed; the following morning he was too weak and ill to return to his bed which he had left temporarily. He breathed with difficulty and rapidly lapsed into unconsciousness and died shortly after. He looked exactly as though he had been strangled or suffocated. Post mortem a small patch of pneumonia was observed and both lungs were much congested. Four weeks after the death of this lad another boy complained of sickness on going to bed, suffered from diarrhœa during the night and was found in the morning livid and curled up dead in bed and had evidently been dead for several hours—a post-mortem examination was not obtained. In most of these cases it was not possible to associate the disease of these children with any obvious cause. One hygienic fault in vogue at the institution was brought to light and remedied, viz. the custom of collective weekly bathing of 200 lads in a warm plunge bath. The bathing arrangements were immediately altered, and this was followed by beneficial results, not only in regard to sudden deaths, but also in relation to the general health of the institution. Dr. Edmund Cautley, in the discussion which followed, was opposed to Macalister's view that the absorption of dirty bath water was responsible for these deaths. Dr. Macalister strongly suspected that the toxin which caused these sudden deaths poisoned the respiratory centre, but the dropsical condition of the lungs suggests rather a primary heart lesion than an affection of the bulb and the absence of myocardial degeneration cannot be negatived seeing that no microscopical inquiry was made in relation to the heart muscle, which cannot be admitted to have been healthy in the absence of such an inspection. The mode of death of these cases bears a resemblance to one narrated by George Carpenter,* where a girl aged 7 years died unexpectedly and suddenly from asphyxia, due to an uncomplicated myocarditis, which was probably post-diphtheritic in origin; the nature of the toxin was inferred from the associated symptoms, but it was not proved. Certain it is that a history of sore throat cannot always be obtained in cases that undoubtedly are diphtherial as judged by the subsequent onset of diphtheritic paralysis; indeed the heart muscle may be seriously involved, and may even recover from that condition long prior to the advent of diphtheritic paralysis, as has been shown by the same writer,† so that it is obviously not always possible to exclude diphtheria. An illustration of sudden death from asphyxia, due to interstitial myocarditis, is also given by Carpenter,* but in this case the nature of the toxin was not obvious. It would seem probable, however, that Macalister's cases were not due to the diphtheria toxin, in that the drainage was perfect, and other boys were not attacked, but it must be admitted that even in well-regulated institutions spasmodic cases of the disorder are apt to crop up occasionally and escape detection. There can be no doubt that certain anomalous fatal cases of toxæmia which arise from time to time in the practice of most physicians of experience are apparently not of a diphtheritic nature and are associated with fatty changes in the heart muscle which are sometimes obvious to the naked eye.

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* 'Reports of the Society for the Study of Disease in Children,' vol. iv, p. 127.

† 'Reports of the Society for the Study of Disease in Children,' vol. iii, pp. 170-181.

Macalister, in the course of his remarks, narrated the case of an infant aged 5 months, who was perfectly healthy up to the night preceding its decease, when it became fretful and seemed in pain, but there were no physical signs. It died suddenly and quite quietly, with a pallid face, while taking its bottle. The post mortem revealed nothing, but the brain was not examined. The suggestion made by Macalister was that advanced by Buzzard some years ago, viz. that of toxic implication of the root of the vagus. To this cause also may be attributed certain cases of sudden death in association with diphtheria which occur with appalling suddenness and on the most trivial exertion, such as urination and sitting up in bed, fatalities which are by no means necessarily, though not infrequently, of myocardial origin.

Instances of sudden death in relation to the specific fevers where the patients are overwhelmed by the dose of the poison, which kills them before the onset of the characteristic symptoms, are well known to all experienced practitioners, but that sudden death may arise in undiagnosed typhoid fever is not so generally recognised. J. Pearson Irvine,† according to Macalister, has recorded a number of cases of sudden death in young children; among them were instances in which the pathological appearances indicated that they had been suffering from enteric fever.

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* 'Reports of the Society for the Study of Disease in Children,' vol. iii, pp. 170–181.

† 'Lancet,' November, 1887.

Heart disease was, in Macalister's experience, not often a cause of sudden death, and in the isolated examples which had come under his notice the mitral valve was involved. He gave a striking example where sudden death apparently took place from the prolonged administration of digitalis in a case of mitral disease. He alluded to irregularity and enfeeblement of the heart's action in association with rheumatism, and thought that it was surprising that this disease so infrequently occasions sudden death. In relation to this condition George Carpenter* records an example of sudden death from uncomplicated myocarditis in rheumatic fever, and this author also narrates in the same communication the case of a boy, aged 12 months, who died suddenly and unexpectedly, and in whom the heart muscle showed extensive disseminated fibrosis. Macalister also mentioned sudden death in infants in sequence to congenital morbus cordis and other well-known pathological conditions. In conclusion, he called attention to the medico-legal importance of distinguishing collapse of the lung from overlying from collapse due to acute congestive conditions associated with catarrhal secretion, a point which had been strongly insisted upon by Brouardel. Porter Parkinson, in relation to this matter, also pointed out that the difference between the post-mortem appearance of overlying and acute pneumonia consisted in the evidence of inflammation, which could be shown microscopically after about six hours of the latter condition, whereas in the case of overlying œdema and congestion of the lung were alone to be observed.

To Dr. J. Porter Parkinson was allotted the difficult task of opening the discussion on the somewhat barren topic of functional disorders occasioning sudden death. He was in favour of the view that death might result from emotional disturbances in the young, such as fright, and narrated as an illustration a case where an apparently healthy child died from excitement while the spectator of a fight. He also believed that death in the early stages of chloroform inhalation might be ascribed to this cause.

Mr. J. W. Thomson Walker, who dealt with sudden death arising from the thymus gland and the status lymphaticus, drew attention to the numerous cases now on record where the characteristic post-mortem findings were an enlarged thymus, moderate enlargement of the spleen, and lymphatic hyperplasia. From analogy he considered the lymphatic hyperplasia found in these cases was owing to a reaction to chronic toxæmia. In an exhaustive editorial on the status lymphaticus in the July number of the JOURNAL we drew attention to this subject and to the rival hypotheses which had been advanced to account for death in these cases, viz. pressure by the thymus and from toxæmia. An opportunity is rarely given to diagnose this condition during life, but as we there pointed out dyspnœa of unknown origin, dulness over the manubrium sterni, and unaccountable enlargement of the accessible lymph glands, are suggestive of the status lymphaticus.

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* 'Reports of the Society for the Study of Disease in Children,' vol. iii, pp. 170-181.

Dr. Edmund Cautley also described two cases of sudden death occurring in infants, in one of which the lesions consisted solely of inflamed agminated glands above the ileo-cœcal valve, together with enlarged mesenteric glands. In the other Peyer's patches were enlarged and there were hæmorrhages into the stomach. In neither child was the condition of the thymus noted by the pathologist, but he thought that these cases were probably due to the status lymphaticus.

Mr. A. H. Tubby dealt with the subject of sudden death arising from surgical causes under several headings, an enumeration of which will be found in our special report of the meeting. In the course of his remarks on the washing out of cavities he narrated experiments that he had undertaken on the chests of animals some years back with a view to the elucidation of the serious accidents which are apt to arise in washing out the pleura and other cavities. As the result of his investigations he arrived at the conclusion that the mere mechanical act of introducing fluid into the chest was not dangerous, but that the chemical irritant alone was responsible for the bad results by reason of its reflex effect upon the cardiac and vasomotor centres in the medulla. When dealing with toxic conditions he alluded to the danger of absorption from the application of carbolic acid to the skin, and to the susceptibility of certain infants to topical applications of iodoform.

Sudden death arising in appendicitis, even after a timely and successful operation, was also dealt with. He thought such cases were difficult of explanation and would attribute their death to the cumulative effect of a particularly active toxin, probably on the cardiac centres. That, no doubt, is one explanation, but a microscopical examination of the cardiac muscle might have shown fatty degeneration, and we should feel disposed to attribute the fatal termination in these cases to the action of the toxin on the heart rather than on the cardiac centres. Indeed, we have found such a condition of the heart muscle in association with fatal cases of appendicitis. Tubby attributed the occurrence of general tuberculosis in sequence to surgical operations for local tuberculous disease to the direct transference of tuberculous material to patent blood and lymph vessels. He also ascribed the onset of miliary tuberculosis, in the case of patients with old phthisis, in sequence to an operation for a non-tuberculous lesion, to the dislodgement of small portions of tuberculous material from the pulmonary arteries or veins and to its distribution throughout the circulation during the struggling attendant upon the asphyxial stage of the anaesthetic.

Dr. Leonard Guthrie was inclined to think that there was some ground for the prevalent belief in the harmfulness of "driving in an eruption," and he instanced cases occurring in his own practice where sudden death had arisen in sequence to the rapid healing of extensive cutaneous eruptions. Mr. George Pernet was not in accord with Dr. Guthrie's ideas on the subject, which did not conform to the views of modern dermatologists. Mr. Arthur Edmunds, however, narrated a case which favoured Dr. Guthrie's suspicions.

Dr. Fortescue-Brickdale, of Bristol, introduced a subject which should be widely known and recognised by the profession. He narrated the case of a rickety child, whose chest was explored for a supposed empyema. Almost immediately a little blood was coughed up, cyanosis appeared, and the child died in about ten minutes after the operation. A post-mortem examination was not obtained. Fortescue-Brickdale has found six similar cases recorded, three by Dr. Thomas Oliver* and three by Dr. A. E. Russell.† Four of these cases were fatal, including two which occurred in children. According to Fortescue-Brickdale, Russell ascribed these fatalities to reflex inhibition of the cardiac and respiratory centres, due to irritation of some small branches of the vagus by the exploring needle.

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* 'Lancet,' January, 1904.

† 'St. Thomas's Hospital Reports,' vol. xxviii (1898).

George Carpenter* in 1893 recorded the case of a girl, aged 5 years, who was suffering from cirrhosis of the lung, and whose chest was explored by the house-physician, which throws a strong light on Fortescue-Brickdale's fatal case. She coughed after the needle was inserted, blood began to pour from her mouth and nostrils, and she died asphyxiated. Post mortem the stomach was found to be full of blood, and the bronchi were filled with blood-stained mucus, which extended on the right side as far as the medium-sized bronchi, and on the affected side into the smallest tubes.

Recently in a case of consolidated lung under the care of Dr. Porter Parkinson, an account of which has not yet been published, the house physician, who suspected fluid, passed a small exploring needle into the chest. Almost immediately the child turned pale; a few drops of frothy blood appeared in the mouth, and death quickly ensued. Post mortem, the stomach was found to be full of blood, as in George Carpenter's patient; the lung was pneumonic.

Dr. Frederick Taylor drew attention to a condition which had not been mentioned at the meeting, viz. the occurrence of sudden death in disease without any adequate explanation for it, and where nothing could be found in the body except lesions which were previously known to be present. He supposed that toxæmia might account for these fatalities. A case of chronic phthisis under his care, who died suddenly, presumably from such a condition, was found at the post mortem to have been choked by a pea in the larynx.

Dr. A. J. Alliot, of Sevenoaks, recorded at this meeting a case of sudden and unexpected death in a girl aged 10 years, in whom superficial symmetrical hæmorrhages were found in the floor of the fourth ventricle corresponding to the nuclei of the pneumogastric nerves.

Unexpected death from delayed chloroform poisoning, a subject which was originally introduced into this country by Leonard Guthrie some years ago, was exhaustively dealt with by Harold J. Stiles and

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* 'The American Journal of the Medical Sciences,' October, 1893, pp. 422, 423.

S. McDonald, of Edinburgh, at a special meeting of the Society for the Study of Disease in Children in May last. An account of this meeting will be found in the June number of the JOURNAL. Stiles and McDonald's paper appeared in the 'Scottish Medical and Surgical Journal,' of August, 1904, and in Volume IV of the 'Reports of the Society for the Study of Diseases in Children,' where a full account of the meeting is also given, and this important subject was further dealt with at considerable length in an editorial in the September number of the JOURNAL.

The discussion inaugurated by the Society for the Study of Disease in Children has proved of undoubted interest and value in that it has drawn attention to the fact that a variety of unknown toxic conditions are often responsible for sudden and unexpected deaths in children. Much investigation will be required before the various death-dealing poisons can be isolated, their sources discovered, and their modes of ingress to the tissues of the body determined. Now that the need for additional knowledge in this direction has been shown to be necessary, it is hoped that original research will be devoted to the elucidation of some of these mysterious happenings in child life.

Abstracts from Current Literature.

Medicine.

Precocious menstruation (*'Verein boehm. Aerzte in Prag.,' February 8, 1904; 'Wien. klin. Rundschau,' No. 35, 1904, p. 634*).—**J. Lenz** showed a case illustrative of this condition. The subject was a child, aged 6¼ years. At birth she was larger than her two elder sisters. She developed very rapidly; at the fourth month her breasts began to enlarge, and a hæmorrhage occurred from the genitals. Since the age of six months similar hæmorrhages have occurred regularly at monthly intervals, each period lasting three to four days. At eighteen months hair developed in the axilla and about the pudenda. The general appearance of the child at the present time is that of a well-developed girl of thirteen years. The breasts are full, and the nipples pigmented. The labia are large, and the hymen is present. On rectal examination the uterus is found to be of scarcely more than normal size, but the left ovary is considerably enlarged. The pelvis is fully developed, and corresponds to that of a girl of eighteen years of age. The epiphyses of the femora are ossified.

E. P. Baumann.

Dermatitis exfoliativa neonatorum (*'Jahrb. f. Kinderheilk.,' August, 10, 1904, p. 178*).—**W. Knocpfelmacher and Karl Leiner** have investigated afresh the relationship between Pemphigus neonatorum and the condition discribed in 1878 by von Ritter under the name of Dermatitis exfoliativa neonatorum. According to this observer the two diseases may be differentiated by the following points: P. neonatorum is characterised by the formation of circular bullæ containing clear, yellowish fluid contents. They have well-defined margins and may enlarge circumferentially. There is no erythematous stage, and never any thickening of the skin. In Dermatitis exfoliativa neonatorum, on the other hand, the eruption of bullæ is commonly preceded by a stage of erythema. The bullæ contain a watery or yellow, turbid fluid; they are of irregular shape and lack a definite margin. The deeper layers of the skin are much more implicated than in P. neonatorum. An essential feature in Dermatitis exfoliativa neonatorum consists in the occurrence of epidermolysis—*i.e.* a tendency for the epidermis to become detached in large sheets which leave the true skin exposed. The condition is fatal in nearly 50 per cent. of the cases affected. Von Ritter believes it to be non-contagious. The writers have investigated a number of cases and find that: (1) Epidermolysis, which is looked upon as an essential feature of Dermatitis exfoliativa, may also occur in cases of P. neonatorum; (2) cases commencing as typical pemphigus may develop into dermatitis; (3) an epidemic of dermatitis may finish up as one of P. neonatorum; (4) in one instance a child which had been exposed to infection from a case of dermatitis developed P. contagiosus; (5) epidemics of dermatitis and P. neonatorum occur concurrently: (6) bacteriological and histological investigations yield similar results for the two conditions. They have, therefore, come to the conclusion that Dermatitis exfoliativa neonatorum is contagious and cannot be regarded as a separate disease. It is simply a severer variety of Pemphigus neonatorum.

E. P. Baumann.

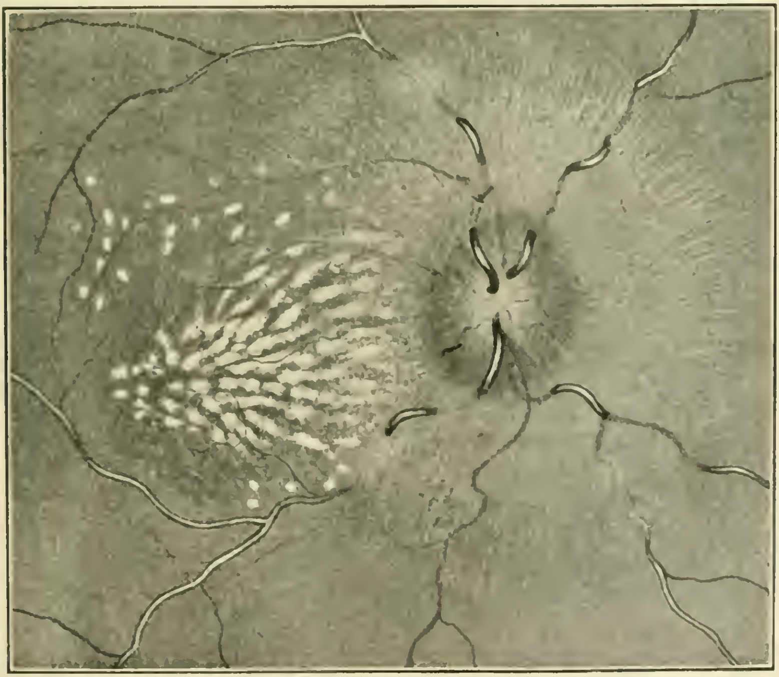
Leucodermia in an infant (*Monatschr. f. Kinderheilk., May, 1904, p. 68*).—**W. P. Schukovski** records an instance of the occurrence of this condition, which is so exceedingly rarely seen in infants. The case was that of a female child of Russian parentage. At birth the child presented bilateral exophthalmos, with a curious puffiness of the face and eyelids and œdema of the feet, whilst large pads of fat were seen in the neck. On the second day jaundice developed, and careful examination in a good light revealed the presence of a number of patches of leucodermia over the front of the chest and abdomen. The appearance of the lesion fully conformed to the characters of leucodermia, for the patches were symmetrically disseminated and of irregular size, with pigmented borders. It was impossible to say whether the condition was antenatal or whether it had developed since birth. The jaundice soon cleared up, but the skin condition remained unaltered. No further signs of exophthalmic goitre developed, but at the age of eleven months there was still marked puffiness of the face along with the existence of pads of fat in the neck, and a gruff voice. The writer discusses the question of the existence here of an atypical form of exophthalmic goitre, and of the bearing of this disease upon the possible nervous origin of the skin changes. It seems, however, more probable that the case was one of infantile myxœdema.

E. P. BAUMANN.

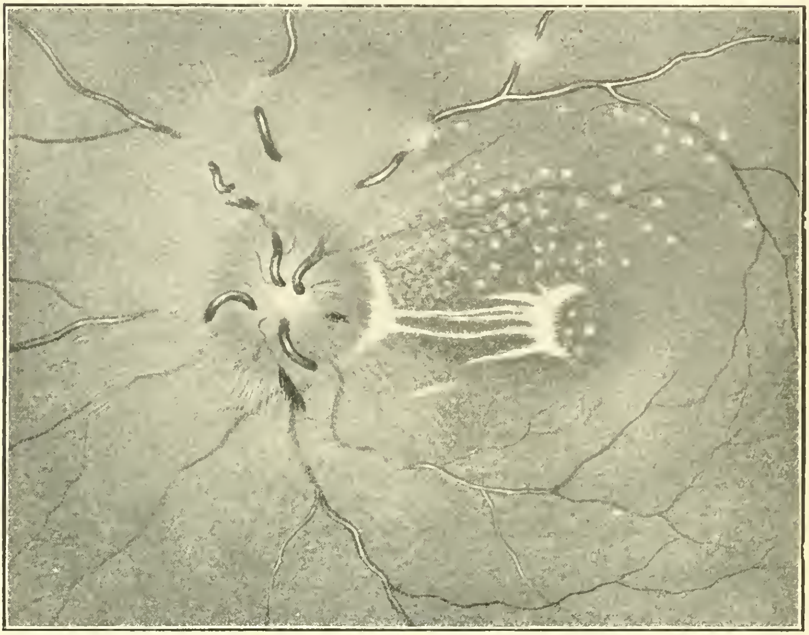
Hæmorrhagic measles (*'Rev. Mens. des Mal. de l'Enf.,' July*, 1904, *vol.* XXII, *p.* 313).—**Paris** relates the case of a child, aged 2 years, who developed very extensive subcutaneous hæmorrhages on the second day of the disease, and who died four days after. After death a small patch of broncho-pneumonia was found, but no visceral hæmorrhages. The interest of the case lies in the fact that, instead of the usual leucocytopenia of measles, there was a leucocytosis to the extent of 38,000, all varieties of the leucocytes being equally increased.

A. ERNEST JONES.

Albuminuric retinitis in a case of parenchymatous nephritis (*Ophthalmological section at Oxford Brit. Med. Assoc., July*, 1904; *'The Ophthalmoscope,'* 1905).—**George Carpenter** reports the case of a girl aged 10, who came under observation seventeen months after the commencement of symptoms pointing to renal disease. There were advanced and characteristic changes in both fundi, which are described in detail. Three months after the child died, and the clinical diagnosis of "large



white" kidneys was confirmed by autopsy. The author refers to the rarity of the observation, but attributes it to neglect in examining the



fundi in such cases rather than to the intrinsic rarity of the condition. It is, however, certainly less common than in cases of interstitial nephritis.

A. Ernest Jones.

Congenital palsy of the velum palati (*'La Clinique Infantile,' July* 15, 1904). **Variot and Deguy** describe a case in a girl aged 6 years. From birth milk returned by the nose on each attempt at deglutition. The child commenced to speak at 20 months, and the voice from the first was nasal. The palate appeared normal on inspection, and the nose also. The tongue movements were natural. The child threw the head back in order to drink. Although there were no adenoids present, yet the patient had the adenoid facies and was a mouth-breather. On electrical stimulation there was extreme diminution of excitability to the interrupted current in the anterior and posterior pillars. The father of the patient also suffered from similar symptoms from birth. The authors consider this interesting case to be one of congenital bulbar paralysis, partaking of a family character.

C. J. Thomas.

Disseminated sclerosis in a cretin (*'Société de Neurologie,' July,* 190 *'Arch. de Neurologie,' vol.* XVIII, *No.* 104, *p.* 163).—**Raymond** and **Guillain** showed a cretinous girl of eighteen, who presented evident signs of disseminate sclerosis—intention tremor, slow, scanning speech, nystagmus, etc. The disease is very rare so early.

A. Ernest Jones.

Recurrences in scarlet fever ('*Prakt. Vratch.,*' *February* 7, 1904; '*La Semaine Medicale,*' 1904).—**S. Yasny**, Kharkoff, reports the case of a girl, who, at the age of $4\frac{3}{4}$, and again at the age of 10, had an attack of scarlet fever. On both occasions she was under observation in the same fever hospital. Yasny discusses the bearings of this possibility on prophylaxis, and advocates greater care in avoidance of infection even in children who have already passed through an attack. He deprecates throat operation, such as tonsillotomy, during an epidemic of scarlet fever.

A. ERNEST JONES.

Albumin in whey ('*Archives of Pediatrics,*' *June*, 1904, *p.* 413).—**C. G. Grulee** quotes several analyses of whey in which the percentage of albumin is given as 0·86—1·02. His own results, based on twenty-four separate analyses, differ very materially. Thus, he obtained an average percentage of 0·5013, minimum 0·2928, maximum 0·6616. The whey was prepared from skimmed milk, heated to 106° F., by the addition of one grain of rennet to a quart of milk. The curd was broken up and filtered off. The whey was heated to 150° F. to destroy the enzyme. Details of the method of analysis, a gravimetric one, are given. He explains the difference in his results as possibly due to the variety of rennet used. Some rennets curdle milk more thoroughly than others. They vary considerably in strength. Possibly the liquid preparations are weaker than others on account of the alcohol or glycerine present inhibiting the action of the ferment. Another suggestion is that most analysts have used the Kjeldahl process of nitrogen estimation, and that this method is not as reliable as the geometric one used by the writer. EDMUND CAUTLEY.

Pathology.

Asphyxia following perforation of a caseous gland into the right bronchus ('*Münch. med. Wochens.,*' *No.* 27, 1904).—**Löhrer** describes a case of this nature. A child aged 4 years, apparently in sound health, showed quite suddenly symptoms of asphyxia, which, however, soon passed off; some hours later they reappeared in a more serious degree and death occurred. Tracheotomy was performed, and artificial respiration was carried out. At the post-mortem examination it was found that a caseous lymphatic gland had perforated the right bronchus and had passed upwards and become impacted in the trachea. K. W. MONSARRAT (Liverpool).

A lymphosarcoma of the thymus in a six-year-old child (*v.* '*Langenb. Archiv.,*' LXXIII. *Heft.* 2).—**Coenen** relates the case of a six-year-old child with a mediastinal tumour, the position of which indicated an origin in the thymus gland. The case ran an acute course, and death supervened a few weeks after the appearance of the first symptoms. The case belonged, as do many other lymphosarcomata, to the group of connective-tissue tumours associated with leucæmic blood changes. Nodules which were present in the kidneys and liver had the characters of true proliferating lymphocyte metastases; such nodules are to be ascribed to the class of ordinary blood-conveyed metastases; they take origin in lymphæmic cells brought by the blood-stream, and have the general characters of neoplastic growth.

K. W. MONSARRAT (Liverpool).

Multiple tuberculous lesions of the skin (*'Prag. med. Woch.,' July* 14, 1904, *p.* 365).—**A. Krauss** reports the case of a girl, aged 12 years, who came under observation for catarrh of the apex of the left lung and Lupus vulgaris of the nose. In addition there were patches of typical scrofulodermia on both feet, and small shotty masses of the size of a hazelnut were seen lying in the skin over the left temple, and over the arms, thighs, and back. The affections of the nose and feet were easily diagnosed, but it was difficult to classify the remaining lesions. They did not conform to any recognised group of skin diseases, but it seemed probable that they must be tuberculous. To decide this question, one of the masses was excised. Histological examination yielded the typical picture of a tuberculous lesion, and this was confirmed by obtaining positive results from the experimental inoculation of guinea-pigs. Further, the patient was injected with 3 mgm. of Koch's original tuberculin. In addition to the severe general reaction which followed, a marked local reaction was produced. The skin over the shotty masses became reddened and tender and several new masses developed; the catarrhal signs at the left apex became much more evident. The writer does not consider that the shotty masses might be early stages of scrofulodermia, for no further development took place in their growth.
E. P. Baumann.

Nævi occurring in connection with the piercing of the ears for earrings (*'Prag. Med. Woch.,' Aug.* 25, 1904, *p.* 441).—**C. Springer** records two such cases. The first was that of a female infant who presented at birth a small nævus on the lobule of the left ear. On the seventh day the lobules of both ears were pierced by a midwife by means of a needle, silk threads being passed through the holes to keep them open. The wound on the right side soon healed, but that on the left suppurated. After a few weeks the septic process subsided, but the nævus was observed suddenly to increase in size. It rapidly involved both surfaces of the lobule and spread on to the pinna. The thermo-cautery was applied, and this treatment met with considerable success, no further growth having taken place at the end of a year. The second case was that of a female infant in whom no nævus was present at birth. The lobules were pierced by a midwife on the fourteenth day. Suppuration occurred in the wound on the right side, but soon subsided. Four weeks after the operation a nævus made its appearance on the lobule of the right ear. As in the first case, it rapidly grew and spread up the ear. Here, again, treatment by cauterisation yielded satisfactory results. The writer considers that the first case exemplifies the manner in which the occurrence of an inflammatory process in its neighbourhood may stimulate a pre-existing nævus to energetic proliferation. In reference to the second case he sees no theoretical objection to the view that an inflammatory reaction is capable of stimulating parts, which are in other respects healthy, to the formation of vascular tissue to a pathological extent. Both cases illustrate once more the barbarism and possible dangers in piercing the ears of young children.
E. P. Baumann.

The fly as a carrier of tuberculous infection (*'New York Medical Journal' and 'Philadelphia Journal,' October* 1, 1904, *p.* 643).—**E. H. Hayward.**—In a series of experiments carried out by the author to demonstrate the possibility of tuberculous infection being carried by flies, the house-fly and the blue-bottle were used. These were enclosed in wire cages and fed on tuberculous sputum. Clean cover-glasses were introduced into the cage, and the fæcal matter of the flies having been deposited on them, the soiled cover-slips were removed and stained, the result being that tubercle bacilli were found on every cover-slip. Cultures of the fæcal matter were also made on glycerin-agar and incubated for a fortnight, at the end of which time growths of tubercle bacilli were found. Smears taken from the stomach and intestines of the flies fed on the tuberculous sputum showed numbers of tubercle bacilli, and the fæces rubbed up with sterilised water and injected into the peritoneal cavity of a guinea-pig caused tuberculosis. From these experiments, and from the fact of the omnipresence of the house-fly, the author considers that the opportunity for the spread of tuberculous infection is obvious. SYDNEY W. CURL.

Two cases of influenzal meningitis (*'Jahrb. f. Kinderheilk.,'* 1904, *vol.* IX, *p.* 777).—**L. Jundell** reports two cases. In the first, a girl eight months old, cerebro-spinal meningitis was accepted as the diagnosis until three days before death, when Pfeiffer's organism was found in the purulent liquid withdrawn by lumbar puncture. The second case was a meningitis complicating broncho-pneumonia. Both cases died.

A. ERNEST JONES.

Adrenal tumour (*'Archives of Pediatrics,' August,* 1904, *p.* 582).—**S. Amberg** reports a case of primary malignant tumour of both adrenal glands in a child of two months, with secondary affection of the liver. The girl, one of twins, was brought for distension of the abdomen, noticed for only one week. She weighed 10 lb. 15 oz. A large tumour, smooth and uniform, except for an indistinct notch to the left of the navel, was felt. Blood examination: 2,800,000 red cells: 11,000 white. Emaciation, with some œdema of the abdominal walls and legs, progressed rapidly. Death occurred in convulsions six days later. The liver weighed 1200 grammes, and consisted mainly of a tumour mass similar in structure to the adrenal tumours. Of these, the one on the left side consisted of an upper glandular mass separated from the kidney by a cyst about five inches in diameter. The tumour cells did not correspond to any cellular element of fully developed adrenal glands, but closely resembled those in the medullary portion of the gland in a six months' fœtus. Chromaffine cells were not properly examined for. According to Kohn the presence of such cells shows conclusively that they are descendants of medullary cells. Morphologically the tumour was a carcinoma or alveolar sarcoma. A useful bibliography is appended. EDMUND CAUTLEY.

Tænia canina (*'Journ. de Médecine de Bordeaux,' August* 21, 1904).—**Nabias.**—A child aged 2 years for three weeks daily passed two or three fragments; there was gastric trouble, irregular diarrhœa, fever, the child was weak and thin; after taking a decoction of pomegranate root, a worm 18 cm. was passed, and health became normal. The worm, also known as *Tænia cucumerina* (Bloch), *Tæniaelliptica* (Batsch), is 10–40 cm. long. The head has four suckers and a retractile proboscis surrounded with three or four rows of hooklets; its usual host is the cat and dog, its intermediate host being lice and fleas. The genital openings are double, symmetrically placed one each side of the segment. There are no uterine canals, but irregularly distributed through the segment are round or ovoid pouches or capsules containing a variable number (2 to 12) of ova, each containing a six-hooked embryo surrounded by a thick laminated concentric membrane covered by a thin vitelline membrane. The worm has the red tint of melon and cucumber seeds, which is characteristic. T. P. BEDDOES.

Therapeutics.

Tuberculin as a therapeutic reagent (*'Med. Corres. Blatt,' July* 9, 1904).—**G. Rosenfeld** has treated a number of cases of tubercle by subcutaneous injections, in graduated doses, of Koch's original tuberculin. He achieved satisfactory results in early cases and directs especial attention to the value of this method of treatment in tuberculous disease of the genito-urinary system. In the selection of cases for treatment those with any considerable degree of pyrexia should be excluded. The patient should, if possible, in every case be confined to his bed throughout the period of treatment. At all costs he must not be allowed up for eighteen to thirty-six hours after an injection, as this is the time during which reaction occurs. Before a second injection is made the patient must be permitted to recover completely from the reaction produced by the first. Under the term "reaction" is understood, not alone any rise of temperature, but also the existence of subjective symptoms, such as pain or general discomfort. The injections should be continued for as long as they appear to exert any influence upon the course of the disease. E. P. BAUMANN.

The use of antitussin in whooping-cough (*'Wien. Klin. Rundschau,' June 5th*, 1904, p. 416).—**N. Swoboda** records the results of a number of observations upon the use of this drug in the treatment of whooping-cough. Antitussin is an ointment with an agreeable aromatic odour. Its most important constituent is difluordiphenyl. Like all fluorine compounds, it is easily diffusible and readily absorbed from the skin. A quantity of the size of a bean is rubbed into the skin of the back and chest. It is well borne by all children, and its use obviates many of the disagreeable features associated with the administration of an internal remedy. The writer obtained very encouraging results, considerable improvement being apparent in about 50 per cent. of the cases treated. Similar improvement was observed in certain other cases of chronic cough, *e.g.* cases of diffuse bronchitis and tuberculous catarrh of the lungs. The writer is uncertain whether the beneficial results obtained are actually to be attributed to the absorption of the drug, or whether the effect is produced by the massage employed or even is the result of psychic suggestion. In any case, he recommends further observations upon the use of this remedy. E. P. BAUMANN.

Purgen (*' Wien. klin. Rundschau,'* 1904, *No.* 36, *p.* 650).—**F. Gundrum** records the results of a number of observations upon the use of this drug. Purgen is a synthetic product which is sold in tablets of three strengths, containing respectively ½ grain, 2½ drachms, and 1½ ounces of the drug. The weakest tablets are intended for infants, the medium tablets for adults, and the strongest for adults laid up in bed. The writer obtained the most satisfactory results in all cases of constipation. One, or at most two or three, tablets invariably proved efficient in a few hours. A minimum of griping is occasioned, and the motions are soft and diffluent. The tablets are palatable and readily taken by children. An essential point in their administration is this—that the tablets must be dissolved in the mouth, or in milk or water, before being swallowed; otherwise they are rendered inert.

E. P. Baumann.

Experiments upon the natural and artificial feeding of young animals ('*Wein. klin. Rundschau*,' 1904, *Nos.* 27–31).—**H. Bruening** has investigated this subject. He employed three lambs, who came under observation from the moment of their birth. The first (No. 1) was allowed to take the breast in the ordinary manner. The others were bottle-fed—one (No. 2) upon its mother's milk (sterilised); the other (No. 3) upon sterilised cow's milk. The bottle-fed lambs took their food well and were at no time the subjects of digestive or other disturbances. All three showed immediately after birth a temporary loss of weight which, in the case of animal No. 1, was recovered from within an hour, and in the cases of No. 2 and No. 3 lasted for a day or two. Thereafter a progressive increase took place and the total body weight of the three animals was doubled, respectively, on the 15th, 22nd, and 20th days. The animals were carefully weighed before and after each meal, the difference representing the amount of milk consumed. The writer attempted to compare the quantities taken by each animal but found this factor variable and not in constant ratio to the body weight. A similar variability exists in reference to the daily caloric needs, and to other similar factors. An investigation into the relative ratio of growth of the three animals showed a great superiority for No. 1. The nutritive properties of natural milk appear greatest during the first week; during the second week it has lost one third of its nutritional value, and in the third week it falls in this respect to the level of the sterilised milks administered to lambs No. 2 and No. 3. The writer adduces numerous other facts and figures, all of which demonstrate the superiority of natural goat's milk over sterilised goat's and cow's milk. He believes that his results may be applied to the human subject, and that they strongly bear out the view that breast-feeding constitutes the best form of nourishment and can never be completely replaced by any method of artificial feeding. Further, should it be necessary to relinquish breast-feeding, any other milk employed ought to be administered in the raw rather than boiled state. E. P. Baumann.

The uncertainties of diagnosis and the necessity of early and vigorous treatment of diphtheria ('*The Canadian Practitioner and Review*,' *September*, 1904, *p.* 421).—**T. F. McMahan.**—In the above paper the author discusses the diagnosis and the treatment of the various forms of diphtheria. He considers that it is often quite impossible to diagnose diphtheria without a bacteriological examination, and also that a bacteriological examination is not always to be relied upon; in support of which statement he quotes three cases in which diphtheria bacilli could not be found in swabs taken from the throat, and yet these cases subsequently suffered from paralysis. In every case in which there is a suspicion of the disease he says anti-toxin should be given, and for the ordinary pharyngeal form, without nasal or laryngeal involvement, he finds a dose of 1,000 units quite sufficient if given early enough. In differentiating diphtheria from follicular tonsillitis he pays little attention to the possibility of the removal of the exudate and injects all doubtful cases with anti-toxin.

Sydney W. Curl.

Otolology, Laryngology and Rhinology.

Cicatricial occlusion of the nares, of the vestibules and nasal fossæ; operation; cure ('*Arch. Internat. de Laryngologie, d'Otologie, et de Rhinologie,' July—August*, 1904).—**C. Compaire.** On February 19th of this year a little girl, aged $3\frac{1}{2}$ years, was brought for treatment. This little child had suffered with variola some months previously, and afterwards two indelible cicatrices had absolutely closed the nares. On the right side there was a small opening at the edge of the nasal fossa, into which it was possible to pass an ordinary needle to a depth of 2 or 3 millimetres, but on the left side the occlusion was absolute, a contracted cicatrix extending to the lip, the naso-labial fold, and the corresponding cheek. All nasal respiration was impossible, and the little girl was obliged to always respire through the mouth. Her parents had also noticed that she was in a state of irritability and bad temper and restlessness, which she had not shown before. These lesions are relatively rare. They are not in themselves of any great gravity, but they have received attention on account of the respiratory troubles which they provoke, and of the æsthetic anomalies which they present, and there is certainly sufficient indication for operative interference. The operation in itself is not serious nor difficult. It is, however, a little delicate, for one must not only re-establish sufficiently the function of nasal respiration, but also obtain an artistic effect. One must depend largely on the post-operative treatment, and not neglect for one moment the most minute precautions. It is necessary that the operation area be rendered absolutely antiseptic, that means be taken to prevent the re-adherence of the fresh surfaces, and the re-establishment of the former cicatricial contraction of the nares. After the earliest stages the gauze plugs should be replaced by simple sterilised caoutchouc tubes, or, even better, by amiante, a substance formed of silicate of magnesia, which is incombustible and not putrefactive, which does not adhere to the tissues, and is not affected by secretions. RICHARD LAKE.

Absence of the right anterior pillar of the fauces and of the right tonsil ('*Arch. Internat. de Laryngologie, d'Otologie, et de Rhinologie,' July—August*, 1904).—**C. Chauveau.** The anterior and posterior left faucial pillars were, in this case, of normal shape and form. There was very little tonsil, which was placed in a fossa of the usual size. On the right side, however, there was no anterior pillar whatever, but there appeared on the surface, at the upper part, a small salient point, as though there had been an attempt at a formation from above. The posterior pillar was a little smaller than normal. There was no sign of any tonsillar tissue. The tonsillar fossa was slightly marked by a shallow cavity, situated approximately where it should have been. This malformation had no effect on either deglutition or phonation. RICHARD LAKE.

Sinus thrombosis of tuberculous origin ('*Archives für Ohrenheilkunde,' February*, 1904; '*Journ. of Laryngol.*,' etc., *September*, 1904).—**F. Grossmann** reports the case of a child aged 5 years, with unilateral right-sided otitis media suppurativa and enlarged cervical glands, which had existed for over a year. The child had had for six weeks a swelling over the mastoid. A radical operation was performed on the mastoid. The lateral sinus was exposed, but, although covered with granulations, was not thrombosed. All the cells were filled with pale granulations, and the bone was carious. Four days later symptoms of meningitis supervened, and bacilli were discovered in the cerebro-spinal fluid. Two days later general miliary tuberculosis, with an old lesion at the apex of the left lung, were found at the autopsy. The sinus was also found thrombosed; he considered that it was in this state at the time of the operation, and the fluid blood found came from above the thrombus, also that the thrombosis was secondary to an old lung lesion. RICHARD LAKE.

Surgery.

Congenital hypertrophic stenosis of the pylorus (' *British Medical Journal,*' 1904, 2, 1148). —**J. H. Nicoll** relates his experience of fifteen cases. Three out of ten on whom he operated died. Two died without any operation. No details of the cases are given. He is in favour of a combination of Loreta's operation with gastro-enterostomy. In one of two cases treated by Loreta's operation no relief was obtained and the child died six days later; in the other, apparent cure was followed by return of the vomiting at the end of two months. Fuller details of the cases, and the mode of treatment, would be of interest. No particulars are given as to the total number treated by any one method.

H. S. Clogg (' *Practitioner,*' *November*, 1904, *p.* 624) in a long paper gives a full description of the condition and notes of one case, under his own care, which died without being subjected to operation. From the description of the post-mortem condition there does not appear to have been a great degree of stenosis. In all he has collected 33 cases of operation for this condition and analysed the results: Loreta's operation 10, with 4 deaths; one due to septic peritonitis from perforation of the wall of the duodenum by the forceps; in 3 due to recurrence of symptoms. Gastro-enterostomy, 17 cases with 10 deaths. Pyloroplasty, 6 cases with 2 deaths. Pylorectomy in 1 case, which proved fatal. One of the cases of gastro-enterostomy was that of a child in whom Loreta's operation had proved useless. Many other cases which have been operated on during the last two years are not included. Some of them have not yet been recorded. From a consideration of the cases and the causes of death after operation, but apparently not from any personal experience, Clogg is strongly in favour of gastro-enterostomy as the best method of treatment. One objection he raises against pyloroplasty is that it may be impossible to dilate the pyloric orifice even under deep anæsthesia. He does not explain the necessity for such dilatation, and seeing that the pylorus is cut through longitudinally dilatation is obviously a work of supererogation. Moreover, once the circular ring of muscle is divided longitudinally, spasm, if persistent, will open the pyloric orifice and not close it. The paper, as a whole, is a very useful contribution and valuable for reference. Unfortunately, the critical spirit is not sufficiently rigidly applied either to the cases or comments. Everyone would not accept all cases recorded as cures without operation as genuine instances of the disease. Diagnosis is extremely difficult, and there is little doubt that, unless great care is exercised, infants suffering from vomiting and constipation due to other causes will be submitted to unnecessary operative interference. In my own experience I have found pyloroplasty most satisfactory. C. T. Dent has performed the operation on five cases for me within two years. Four of the children are living—fine, strong, healthy children, the oldest being over 2 years. They have never had any signs of recurrence. The fifth died some months after operation from an attack of summer diarrhœa. I have no experience of other operative measures.

J. Dorning (*'Archives of Pediatrics,' September*, 1904, *p.* 681) reports a case in a boy, fourth child of healthy parents, apparently healthy at birth and weighing 8½ lbs. Vomiting after nursing began at once. The child seemed always sleepy, never cried, but would fret after vomiting until nursed again. Nothing special was noticed about the stools. When six weeks old he vomited excessively, bringing up curds and mucus. The bowels became constipated and urine scanty. At eight weeks he had an attack of fever. He was then extremely emaciated, tongue clean, and had a lump about as large as a medium-sized olive, just to the right of the median line. Although a correct diagnosis was made, an operation was not considered advisable "because of the low vitality of the baby." Treatment consisted of lavage and nutrient enemata. Death occurred at the age of 2½ months. The usual condition was found post mortem, without much dilatation of the stomach. Microscopically the submucosa was said to show fibrous thickening in addition to hyperplasia of the circular muscular coat. A fair bibliography is appended, but it makes no reference to the paper of Cautley and Dent ('Med.-Chir. Trans.' vol. lxxxvi, 1903), to which a very complete bibliography was added. In the discussion on Dorning's case, a certain amount of scepticism was expressed by Northrup as to the occurrence of the disease. Morse stated he had seen two cases during the past year; both infants were operated on by gastro-enterostomy with fatal results. Holt also stated he had recently seen two cases. One was operated on unsuccessfully. Both were verified post mortem.

It is a pity no operation was done in Dorning's case, as a fatal issue is almost a certainty without operative treatment. As to the nature of the operation, gastro-enterostomy is now discredited because the mortality is so great. The choice lies between pyloroplasty and dilatation of the pylorus. Dent performed pyloroplasty in five out of my last six cases without a fatality. The other was not operated on, and died. Edmund Cautley.

Septic infection of a branchial fistula (*'Monatschr. f. Kinderheilk.,' September*, 1904, *p.* 252).—**H. Cramer** describes a case occurring in an infant. Fistulæ and cysts connected with remnants of the branchial clefts are of fairly common occurrence, but it is a remarkable fact that, although of congenital origin, they comparatively rarely come under observation during the early years of life. In the case in question, a small tumour was discovered along the middle of the anterior margin of the left sternomastoid within twenty-four hours after birth. In a day or two the tumour had increased in size, and the child became restless and irritable. On the third day it refused its food, and the whole left side of the neck was seen to be swollen and œdematous. The temperature rose, and it was observed that after feeding the milk was instantly vomited. An incision was made and a large quantity of foul-smelling pus evacuated. Death occurred next day. At the autopsy a large abscess cavity was found under the left sternomastoid. The œsophagus was seen to be in a state of phlegmonous inflammation, and completely stenosed at the level of the larynx. Below this level a fistula was found leading from the lumen of the œsophagus into the abscess cavity. The trachea was not compressed and the pleura not infiltrated; thymus gland natural. Bacteriological examination showed the presence of streptococci. Histologically, the abscess cavity was found to have an epithelial lining. There was no doubt then that the cavity was preformed, and in fistulous communication with the œsophagus, which had probably been the portal of infection. E. P. Baumann.

Stenosis of small intestine (of tuberculous origin) in children (*'Revue de Chirurgie,' August and September*, 1904, *pp.* 165 *and* 400). **Berard and Leriche**, in a paper on this subject, draw attention to the fact that although contracting tuberculous lesions of the small intestine have been fully recognised as occurring in adults, the condition has not been supposed to be common in children. They are, however, of opinion that the primary disease usually occurs in childhood, but that the onset of the symptoms is so insidious that the disease may not be recognised until adult life. The various forms of tuberculous stenosis which may be met with are (1) cicatricial or stenosing, (2) hypertrophic, (3) entero-peritoneal, and (4) multiple. The point of election for the stenosis of the first form is the lower part of the ileum, and the diminution in the calibre of the gut is variable, but is always greater during life than after death, showing that part of the symptoms are due to spasm. It is often the sequel of tuberculous enteritis, and the symptoms of obstruction come on very gradually. Griping pain is the principal symptom, and this is accompanied by meteorism and visible peristaltic contractions. At the same time there are often musical and bubbling sounds to be heard in the abdomen. Vomiting is frequent, while the stools are normal, although there is often constipation or diarrhœa. When the tympanitis has subsided, it is nearly always possible to discover enlarged mesenteric glands. In the second or hypertrophic forms, there is active formation of new tuberculous tissue in addition to the contraction. In spite of this, the development of the symptom of obstruction is very slow, since the contracted portion remains permeable for a long time. In addition to the symptoms already described, it is also usual to feel a tumour, which is of considerable size, and is situated in the umbilical or right iliac region. The portion of gut affected is usually the lowest part of the ileum. In the third or entero-peritoneal form, the intestinal lesions do not predominate, and are often secondary to the peritoneal infection, the intestine being studded with caseating tubercles. The obstructive symptoms are usually not marked, and it is rare to meet with acute obstruction. The coils of intestine are densely matted together, and the abdomen becomes enormously distended at the same time as the patient emaciates. In the fourth or multiple form, cases are referred to in which from three to seven separate contractions existed, and these were at distances of from five to sixty centimetres apart. They are usually associated with peritoneal deposits, and nearly always with enlarged mesenteric glands. The symptoms will be the same as in the other forms. With regard to treatment, this must be surgical, and the following operations may be employed: (1) simple laparotomy, (2) enteroplasty, (3) enterectomy, (4) entero-anastomosis, and (5) ileo-sigmoidostomy (intestinal occlusion). Enteroplasty is not a suitable operation, since the intestinal walls in the neighbourhood of the contraction are not sufficiently healthy for intestinal suture; enterectomy is an operation of great severity, and though the ideal operation when a single stenosis exists, unaccompanied by adhesion, it is not suitable for cases where the stricture is multiple or where there is matting of intestines. Enteroanastomosis is of value where the stricture is single or where two or more are close together. Intestinal occlusion by ileo-sigmoidostomy is the best method in multiple adherent stenosis. The authors sum up as follows: "Enteroplasty is an exceptional method; enterectomy should be employed wherever it is possible—that is to say, for defined lesions in patients whose general condition is satisfactory. In the other cases one has the choice of occlusion or enteroanastomosis. It is, above all, the seat of the stenosis which will decide the choice of the procedure. Finally, in the presence of very widespread infection, simple laparotomy will remain as a last resource, in order to reduce the inflammatory phenomena, to make the lesions subside, and sometimes to prepare the way for a secondary radical operation. Moreover, more often than one would, *a priori*, dare to hope, it will, in a child, effect a complete cure." With these recommendations one cannot absolutely agree, since the knowledge of the wonderful curative effect of simple laparotomy in tuberculous affections of the peritoneum would incline one to trust to this alone, at any rate, in the first instance, and reserve one of the more severe procedures for cases where simple laparotomy had failed. Even when a definite cicatricial stenosis is found, and simple laparotomy had failed, most surgeons would hesitate to do an enterectomy, and one would advise the less severe procedure of lateral anastomosis either with an adjacent coil of ileum, or, if the disease be extensive, with the sigmoid.

LEONARD A. BIDWELL.

Reviews of Books.

LECTURES ON DISEASES OF CHILDREN. By ROBERT HUTCHISON, M.D., F.R.C.P. Publisher: Edward Arnold, London. Pp. 327, 65 Illustrations and diagrams. Price 8s. 6d. net.

THIS volume comprises a series of lectures which were delivered by the author at the London Hospital two years ago, and it embodies a study of the common diseases of children which are not usually dealt with in the systematic lectures in medicine. It adds another to the number of works on the subject which have appeared in recent years, but it is a welcome addition owing both to the pleasing literary style of the writer and to the thoroughly practical character of the teaching which it contains. There is a great tendency on the part of authors, while giving exhaustive accounts of the clinical characters, causes, and pathological features of the diseases which they describe, to give too little attention to questions of treatment, and in Dr. Hutchinson's book it is gratifying to find that much practical information on these points has been afforded.

The student will get much help from the method which has been followed of explaining the significance which is to be attached to various signs and symptoms of disease, and the numerous excellent photographs illustrating clinical types greatly add to the value of the descriptions contained in the text.

In a compact and readable way most of the essential points concerning a number of the commonest disorders of infancy and childhood have been gathered together, and the book is one which will prove decidedly useful both to the student and to the practitioner.

C. J. MACALISTER (Liverpool).

THE DIFFERENTIAL DIAGNOSIS OF SYPHILITIC AND NON-SYPHILITIC AFFECTIONS OF THE SKIN, INCLUDING TROPICAL DISEASES. By GEORGE PERNET. Publishers: Adlard & Son, London. Price 6s. 6d. net.

THIS book, which gives evidence of careful research and painstaking observation, can be strongly recommended to students and practitioners.

It is well printed, and is a valuable addition to the literature on the subject.

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SOME CONDITIONS WHICH MAY BE MISTAKEN FOR MENINGITIS.

By E. P. BAUMANN, M.D., M.R.C.P.

FEW diseases of childhood afford so much difficulty to the practitioner of medicine as that morbid condition known as meningitis. It is not that the occurrence of the disease itself as a rule produces diagnostic difficulties, but rather that a number of other diseases tend to assume a type simulating meningitis. It is true that, on the one hand, a case of tubercular meningitis may be mistaken in its early stages for one of typhoid fever, or for the onset of one of the acute exanthemata; or, on the other hand, that tubercular meningitis occurring in the course of generalised miliary tuberculosis may be overlooked. It is also true that suppurative meningitis occurring secondarily in the course of a septic or pneumococcal infection may clinically never be suspected to exist. With these, and perhaps a few other exceptions, however, the diagnosis of a case of meningitis rarely offers much difficulty. It is otherwise with the cases in which meningitis is merely simulated, for here the difficulties of accurate differential diagnosis are often great and sometimes insurmountable. It is well that we should all realise that the nervous system of the child is a curiously unstable organisation which is readily disarranged by ailments that are often comparatively trivial. The resultant clinical picture may mimic meningitis with an astounding degree of fidelity.

Before proceeding to illustrate this statement it will be useful briefly to consider the subject of meningitis in general. Meningitis in children may for all practical purposes be said to occur in one of three forms: (1) Tubercular meningitis. (2) Posterior basic or "simple" meningitis. (3) Suppurative or purulent meningitis. Until a few years ago it was customary to speak of spinal as distinct from cerebral meningitis, but we now know that the structures affected are one and the same, and that inflammation of the pia arachnoid membranes of the brain frequently, in fact customarily, spreads to the membranes of the cord. By meningitis we therefore understand an inflammation of the cerebro-spinal leptomeninges.

Tubercular meningitis is the result of the invasion of the cerebro-spinal membranes by the tubercle bacillus. The membranes at the base of the brain are primarily affected, although the inflammatory process may also, to a lesser extent, involve the convexity. It usually occurs secondarily to some tubercular focus in another part of the body. It may occur at any time, but is, perhaps, most frequent between one and two years of age. The onset of the disease may be abrupt or quite insidious; it commonly runs its course in twenty to twenty-five days, although it may be prolonged, and occasionally is much shorter. The symptoms vary with the stage of the disease. In the early stages, the clinical features are those of headache, malaise, wasting, constipation, and general irritability. Soon the signs of cerebral irritation grow more intense, and the motor and sensory organisations present evidences of morbid excitability. This stage is characterised by the occurrence of delirium, vomiting, photophobia, and general hyperæsthesia of the special senses; muscular twitchings and convulsions occur, as well as stiffness of the neck, retraction of the head and abdomen, squinting, and optic neuritis. Lastly, the patient passes into a state of paralysis and coma. The pulse in the early stages is rapid, irregular, and intermittent. Later, when the cardio-inhibitory centre is irritated it becomes irregular and slower. Lastly, when that centre is paralysed, the pulse again becomes rapid and irregular. Vomiting usually occurs once or twice in twenty-four hours, and is of the cerebral type. The temperature is generally raised and very irregular, the chart showing considerable oscillations which are seldom typically hectic in their course. The optic discs not infrequently present evidences of swelling and neuritis, and, in some cases, choroidal tubercles are found. Kernig's sign and the tache cérébrale are generally present at some stage of the disease. The tendon reflexes may be unaltered; the cutaneous reflexes are frequently absent or diminished in the later stages. This is the description of a more or less typical case, but one or several signs may frequently be absent and the disease run an atypical course which obscures the diagnosis. Thus, the onset of the disease may be marked by the sudden paresis of a limb or one side of the face, leading to a diagnosis of cerebral haemorrhage; or the only symptoms for a time may be constant vomiting and general twitchings and tremors suggesting a condition of uraemia. Again, the sole symptom may consist in convulsions followed in a few days by a fatal issue. The prognosis is exceedingly grave, although some authenticated cases of recovery are recorded.

Posterior-basic meningitis is the result of the invasion of the cerebro-spinal membranes by the diplococcus intracellularis meningitides, and is probably only a sporadic variety of epidemic cerebro-spinal meningitis. The inflammatory effusion in this case extends mainly over the posterior and central areas of the base of the brain. The convexity is generally not at all or only slightly affected. The disease occurs vastly more frequently in the first nine or ten months of life than at any other age. It is, in fact, relatively uncommon after the first year of life. The onset is generally more or less acute. Vomiting or convulsions may constitute the first symptoms noticed by the mother. Frequently the first change to attract attention is the head retraction. This symptom constitutes the characteristic feature of the disease. It is almost constant and generally lasts throughout the illness, although in some cases it disappears during the last few weeks before death. Sometimes the head retraction is so marked that the occiput may almost touch the buttocks. Accompanying the opisthotonos there is often rigidity of the limbs. In other words, the motor irritability in this disease takes the form of tonic spasms rather than of the clonic convulsions characteristic of tubercular meningitis. Another characteristic feature is the retraction of the upper eyelids, the result of tonic spasm of the levator palpebrae. The child lies with its eyes staring in marked contrast to the tightly-clenched lids of photophobia in tubercular meningitis. Blindness usually exists, although it is very unusual to find any optic atrophy or inflammation. The only change commonly noted in the disc is a curious grey pallor. Nystagmus is fairly frequently present, whilst squinting is rarer than in tubercular meningitis. The pulse is generally regular, and shows no characteristic variations. The temperature is raised and irregular for the first few weeks, and then generally continues at about the normal. Tache cérébrale and abdominal retraction may occur, but are not characteristic. The knee-jerks may be unaltered or slightly increased. Kernig's sign is generally present. The marked wasting and frequent vomiting which occur are very characteristic of this condition. As the disease progresses bulging of the fontanelle becomes a marked feature, accompanied by increase in the size of the head. The course of posterior-basic meningitis is a very chronic one, often extending over many months. Fatal cases generally run a much longer course than cases of tubercular meningitis. A considerable proportion of recoveries occur, but most of these suffer some permanent damage, such as hydrocephalus, deafness, blindness, or mental impairment. Nevertheless, the fact that the prognosis with regard to life is so much less grave renders it highly important to distinguish this disease from tubercular meningitis. This is, as a rule, not difficult in view of the marked head retraction, the chronic course, and the absence of optic neuritis; but cases are very occasionally met with in which a differential diagnosis is impossible. These are generally cases in which the ordinary age limit is overstepped, as when tubercular meningitis occurs in an infant of under ten months, or posterior-basic meningitis in an older child; in some cases, too, of tubercular meningitis, in which the effusion predominates at the posterior portion of the base of the brain, head retraction may be very marked, and an error of diagnosis arise. It is, in fact, more common to mistake a case of tubercular meningitis for one of posterior-basic meningitis than to fall into the converse error. At the autopsy the viscera in this disease are generally normal.

Suppurative meningitis is the one form of inflammation of cerebrospinal membranes which attacks primarily the convexity of the brain. When the disease has lasted for some little time the whole brain, base as well as convexity, may be found enveloped in a dense sheath of purulent exudate. It is generally a secondary affection, and may result either by extension from an inflammatory process in one of the neighbouring cavities, such as the ears, or, as is very frequently the case, forms one of the terminal lesions of an empyema, pneumonia, or suppurative process in some other part of the body. It occasionally occurs in connection with scarlet fever, influenza, and nephritis. The causative factor is most frequently the pneumococcus, but the streptococcus and several other organisms may be concerned in the production of suppurative meningitis. The onset and course of this disease is much less definite than is the case with the other forms of meningitis, for the symptoms are frequently masked by those of the condition which it complicates. The occurrence of persistent headache and marked delirium or somnolence, with bulging of the fontanelle, slight stiffness of the neck, and a high temperature which is not accompanied by a corresponding increase in the pulse rate, should always arouse suspicions of this condition. But the symptoms are often latent, and the existence of a meningitis never recognised during life. Retraction of the head is slight and may be entirely absent, and ocular changes are uncommon; vomiting also does not form a constant phenomenon. From this description it will be seen that suppurative meningitis can scarcely be confused with posterior-basic meningitis. The diagnosis from tubercular meningitis is much more difficult, particularly when in the latter disease the convexity of the brain happens to be especially affected. The duration of a case of suppurative meningitis is very short, and the disease usually runs its course in a few days. The issue is almost invariably fatal, although cases of recovery are sometimes met with. These are probably cases in which the inflammatory process has involved only a small area, as when localised suppurative meningitis follows by extension from disease of the middle ear.

In the above short summary I have avoided all reference to the more uncommon forms of meningitis, such as those of syphilitic origin, which only rarely come under the observation of the general practitioner. Of the three types here discussed tubercular meningitis is undoubtedly the commonest, and suppurative meningitis that least frequently met with. It will be seen that they present fairly sharp differential features and seldom offer insuperable diagnostic difficulties.

On the other hand, a number of morbid processes may so closely simulate meningitis as to be mistaken for it. The conditions which are most prone to adopt so-called "cerebral types" and offer the greatest difficulties in this respect are perhaps typhoid fever and pneumonia. The following cases illustrate this point:

CASE I. *Typhoid fever.*—A boy, aged 8 years, was admitted into the Hospital for Sick Children, Great Ormond Street, in January, 1902, under the care of Dr. Garrod, for headache and vomiting. Three weeks before admission he had fallen and knocked his head against an iron bar. For a fortnight after this he continued well, and then began to complain of pain in his head and to vomit after meals. The pain occurred at intervals, and between the attacks he was drowsy and displayed sensitiveness to light and sounds. His bowels had lately been constipated. He had always been a delicate child. There was no history of tubercle in the family. On admission the temperature was 104° F., with a slightly irregular pulse of 120, and a respiration rate of 40 per minute. The child was pale and thin. He was extremely irritable and displayed marked hyperæsthesia to touch, light and sound. The pupils were unequal, the right being small and reacting fairly well to light and accommodation, whilst the left was dilated and reacted sluggishly. The optic discs were normal. There was slight paresis of the right side of the face which passed off in a few hours. The neck was held somewhat stiffly, but there was no head retraction. Kernig's sign was present. The reflexes generally were active and the great toe reflex was flexor. Marked tache cérébrale was present. The ears appeared to be healthy, the tongue was furred, and the abdomen tumid and distended. Enlargement of the spleen was not detected, and no skin eruption was present. There was some impairment to percussion at the base of the right lung, and slight bronchitic sounds were heard all over the chest. Next day the condition of cerebral irritability had further increased; there was now some head retraction, and nasal feeding had to be adopted.

The case for the first few days was believed to be one of typical tubercular meningitis and demonstrated as such to students. The lung and abdominal conditions were regarded as evidences of a generalised acute tuberculosis. Soon, however, the temperature was seen to conform to the picture of a case of enteric rather than to one of acute tuberculosis. A Widal was performed with positive results, and the case from now onwards was treated as one of typhoid fever. The cerebral signs gradually subsided and the child passed through an ordinary attack of enteric complicated by an attack of laryngitis and a slight relapse in the seventh week. As is usual with children, complete recovery eventually resulted. It may incidentally be mentioned that, although no exanthem was present during the original attack, a profuse crop of typhoid spots appeared with the relapse. This is a not uncommon occurrence in enteric fever in children.

Case 2. *Lobar pneumonia.*—A boy, aged 19 months, was admitted into the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Lees in October, 1902. The child had been ailing ever since an attack of scarlet fever some months previously. For five days previous to admission he had been feverish and irritable, and subject to diarrhœa. He had been a healthy, breast-fed baby. The family history was not significant. He presented marked cerebral symptoms and lay curled up listlessly on one side, resisting interference. The neck was stiff, and there was considerable head retraction. The eyes were wide open and the upper lids somewhat retracted. There were no ocular changes, and the ears were healthy. The tendon and plantar reflexes were natural, and the cutaneous reflexes somewhat sluggish. Kernig's sign was absent. The tache cérébrale was marked. The temperature was 103·8° F., the pulse 152 and regular, and the respiration rate 56 per minute. There were evidences of consolidation of the lower lobe of the right lung. Abdomen natural.

The case was at first regarded as being probably one of posterior-basic meningitis, and from this point of view the lung signs were puzzling. The course of the temperature was, however, so typical of a lobar pneumonia that a diagnosis of this condition was made. On the tenth day the temperature fell by crisis, and resolution of both pulmonary and cerebral signs speedily took place.

Case 3. *Broncho-pneumonia.*—A male infant, aged 9 months, was admitted in December, 1903, under the care of Dr. Garrod. For a week before admission he had suffered from discharge from the left ear and frequent vomiting. He had been a healthy, bottle-fed baby. The family history was unimportant. The child on admission was thin and cyanosed, and looked very ill. There were signs of patchy consolidation scattered through both lungs, the abdomen was tumid, and both liver and spleen were somewhat enlarged. The fontanelle was open but not bulging. There was extreme head retraction and nuchal rigidity. The pupils were small and equal, and reacted sluggishly. Discs normal. An external strabismus of the right eye was observed. The ears appeared to be healthy. Kernig's sign was present. The reflexes were natural. The temperature was very irregular, presenting marked oscillations of a somewhat hectic type. Death took place a week after admission to hospital. At the autopsy large areas of broncho-pneumonia were found in both lungs. The liver and spleen were congested. The brain and membranes were perfectly natural; the ears contained only that trace of muco-pus which is so commonly found in the middle ear of young children.

Besides cases of typhoid fever and pneumonia there are many other morbid processes which may simulate meningitis. One of the most confusing of these, perhaps, is influenza of the "cerebral" type, as the following case shows.

Case 4. *Influenza.*—A boy, aged 4½ years, was admitted in April, 1904, under the care of Dr. Garrod for headache and vomiting. Four weeks before admission he had a fall, and three days later began to suffer from headache and vomiting. Previous to this he had been a healthy child. Several members of the family had recently had influenza. The child was well nourished, but looked pale and ill. He was drowsy and irritable, and presented marked head retraction and rigidity of both legs. Kernig's sign was present, as also the tache cérébrale. The tendon reflexes were generally increased. There was an internal strabismus of the right eye; the pupils were equal and reacted freely. The optic discs were swollen and the veins showed slight turgescence; no choroidal tubercles were seen. The ears were natural. The abdomen was somewhat retracted, and examination of the chest revealed some bronchitis. The temperature was 100·8° F., with a regular pulse of 96 per minute. For the first week there was occasional vomiting. The temperature during this time continued high and irregular, and then gradually fell to the normal. As the pyrexia subsided the general condition of the patient improved, the optic discs cleared up, the head retraction and squint disappeared, and one by one all the cerebral signs subsided. After three weeks the child was sent out well.

It is true that Pfeiffer's bacillus was not demonstrated in this case, and that the diagnosis of influenza may be questioned, but the history and course of the case was very significant. An epidemic of influenza was raging at the time, and at about the same period there was adadmitted into the hospital several other cases which had a history and ran a course similar to that of the case described.

Mastoid disease and disease of the middle ear may sometimes cause the greatest diagnostic difficulties. There may be present all the signs of cerebral irritation such as mental irritability, head retraction, photophobia, etc., and meningitis may be completely mimicked.

Case 5.—*Mastoid disease.*—A girl, aged 4 years, was admitted in February, 1903, under the care of Dr. Garrod for screaming and vomiting. For a week before admission she had complained of earache, and a few days afterwards she began to scream and vomit. She had had measles at the age of twelve months, and had been troubled by her ears ever since. There was a strong history of phthisis on the maternal side of the family. The child was drowsy and very irritable, and lay curled up on her left side. The pupils were unequal, and reacted sluggishly. There was no squint. The optic discs were swollen. The neck was stiff, but the head not retracted. Kernig's sign was present. The reflexes were normal. There was tenderness over the left mastoid, and a furuncle was seen in the external auditory meatus of this side; the right membrana tympani was destroyed and replaced by much granulation tissue. The temperature was 103° F., and the pulse rapid and irregular. Next morning, definite optic neuritis was seen in both discs. A Widal was performed with negative results. A blood-count revealed a leucocytosis of 40,000 white cells per cubic millimetre, the majority of which were polymorphonuclear cells. Up to this time a doubt had always still remained as to the possibility of the existence of tubercular meningitis, but the result of the blood-count showed that a suppurative process was present, and a mastoidectomy was therefore decided upon. Pus was found in the left mastoid. The temperature immediately fell, and marked improvement of a temporary character resulted. Death ensued a few days later. At the autopsy there was found disease of the left mastoid process, together with thrombosis of the lateral sinus. The brain and its membranes were healthy.

CASE 6.—*Middle-ear disease.*—A boy, aged 15 months, was admitted into the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Penrose, in April, 1904, with many signs of undoubted meningitis. The temperature was raised and irregular, and there was much vomiting. At first sight a diagnosis of meningitis might easily have been made. There was, however, a purulent discharge from the right ear. When this was treated the temperature fell and the cerebral signs subsided. As the ear condition improved the child grew better, and it eventually left the hospital convalescent.

As might be expected, various organic diseases of the brain may vividly simulate meningitis. This is illustrated by the following curious case:

CASE 7. *Sarcoma of the brain.*—A boy, aged 12 months, was admitted in October, 1903, under the care of Dr. Garrod, for drowsiness and vomiting. Six weeks before admission he had had a fall, after which he became drowsy and irritable. He frequently vomited after his meals, and the mother had on several occasions noticed twitchings of the face and limbs. The child had hitherto been healthy. The family history was unimportant. The patient, who was fat and well-nourished, was in a semicomatose state, and presented paresis of the right side of his face. The right upper lid was somewhat retracted; there was no squint. The optic discs were natural in appearance, although the child appeared to be blind; there was no evidence of ear disease. The head was slightly retracted and the nuchal muscles very rigid. Occasional twitching of the right arm was observed. Kernig's sign was present. The knee-jerks were exaggerated, and the great toe response extensor in character. The head was large, with a bulging fontanelle and widely separated sutures. Tache cérébrale was present. The abdomen was not retracted, and nothing abnormal was discovered in the viscera. During the patient's stay in hospital the temperature was raised and irregular, and there was occasional vomiting. The general condition varied greatly; occasionally there was considerable improvement, and the child appeared to see. Lumbar puncture was performed several times, and a small quantity of cerebro-spinal fluid withdrawn. The fluid yielded negative results on examination in films and by cultures. On each occasion the puncture was followed by a temporary improvement and diminished bulging of the fontanelle. After seven or eight weeks, the condition grew progressively worse. Varying local pareses occurred, and the child became slowly comatose. A fatal termination eventually resulted. At the autopsy a large sarcomatous mass was found growing from the ependyma of the right lateral ventricle of the brain. The membranes were natural and no trace of inflammatory exudate was found at the base of the brain. The lateral ventricles were distended, but the interventricular foramina and passages were patent. The ears contained a small quantity of muco-pus.

The case had been confidently regarded as one of posterior-basic meningitis.

The following case illustrates the manner in which renal disease in young children may simulate meningitis:

Case 8. *Renal disease.*—A female child, aged 7 months, was admitted in May, 1903, under the care of Dr. Penrose. Three weeks before admission the child was noticed one day to be fretful and feverish. Next day it began to cough and vomit, and the mother observed that its hands trembled and the eyes were turned inwards. The child had always been delicate, and had suffered from snuffles and rash. There was a strong phthisical family history, and the mother had had several miscarriages. On admission the child seemed intelligent, but was extremely irritable. It presented well-marked specific stigmata. The nuchal muscles were rigid, and the head slightly retracted. The child lay with its eyes wide open, but the upper lids could not be said to be retracted. The anterior fontanelle was nearly closed and not bulging. The limbs were somewhat rigid. Kernig's sign was present. The reflexes were natural. No changes were observed in the ocular muscles or optic discs, and the ears were natural. The viscera appeared to be normal, and there was no evidence of œdema. Throughout the first three weeks in hospital the temperature remained high and very irregular, then it gradually fell to the normal. There was daily vomiting. Lumbar puncture was performed on several occasions, examination of the fluid yielding negative results. The general condition varied considerably, there being periods of marked improvement. The urine was examined twice, and on each occasion found to be normal. The whole appearance of the case always suggested posterior-basic meningitis. Death occurred after six weeks. At the autopsy there was no sign of meningitis or any other pathological condition of the brain and its membranes. The kidneys, however, showed obvious signs of disease, and on histological examination there was seen to exist infiltration of small round cells and intense acute glomerular and interstitial nephritis, with some tubular inflammation. In a few places the tissues had undergone slight fibroid changes, evidencing a lesion of longer standing.

The case was thus one of nephritis, and the cerebral symptoms were probably uraemic in character. Had it been possible to examine the urine daily some clue to the true condition might have been obtained. This is, however, a difficult matter in young infants, and more particularly in female infants. It is remarkable that no albumin or casts were discovered on the few occasions on which an examination was made, but Cassel * has only recently again drawn attention to the fact that the urine of syphilitic children suffering from renal complications in a large proportion of cases is strangely free of foreign constituents.

I have already referred to the diagnostic difficulties which some cases of "cerebral" typhoid fever offer. Occasionally much simpler disorders of the gastro-intestinal system may also produce a clinical picture simulating meningitis. The following case illustrates this point :

Case 8. *Gastro-intestinal disturbance.*—A girl, aged 4 years, was admitted in January, 1903, under the care of Dr. Garrod, for vomiting. Until a week previous to admission she had been well. Then she developed a "bilious attack," subsequently upon attending a Sunday-school treat. The attack was ushered in by frequent vomiting. Next morning she complained of headache, and towards nightfall became semicomatose. During the next few days the condition was one of extreme drowsiness alternating with delirium. Her breath was very foul, there was frequent vomiting, and the bowels were constipated. She had always been a bilious child, and all her life was subject to gastric disturbances. The mother had had several miscarriages. On admission the child presented the appearance of an undoubted case of meningitis. The temperature was 101° F., with a rapid and irregular pulse. The child was flushed; she was extremely irritable and resented examination. The head was retracted and the nuchal muscles rigid. The knee-jerks were active. The great toe reflex yielded a flexor response on the left and was extensor on the right side. Marked tache cérébrale was present. There were no ocular changes, and the ears appeared healthy. The tongue was thickly coated and the breath offensive. The spleen was not enlarged, but the abdomen was slightly tumid and the intestines could be felt to be laden with fæcal accumulation. For a day or two this clinical picture was maintained unaltered, and then, under the influence of judicious dieting and a few doses of calomel, the temperature fell to normal and the whole condition rapidly subsided.

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* 'Berliner klinische Wochenschrift,' 1904, No. 21.

Another form of gastro-intestinal disturbance which may sometimes suggest a meningitis is the so-called "hydrocephaloid" condition of infants suffering from acute gastro-enteritis. This state is marked by extreme apathy, accompanied by depression of the fontanelle. Serious diagnostic difficulties between this condition and meningitis are, however, rarely experienced.

This list more or less completes the number of the diseases which may more commonly mislead the practitioner, but it by no means comprises all the morbid conditions that may simulate meningitis.

Thus, a remarkable case was recently admitted into the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Still, for meningitis, in which all the symptoms abruptly subsided after a large round worm was passed with an enema.

Cases of trichinosis simulating meningitis have occasionally been reported on the Continent.

It can readily be understood that cases of abscess of the brain and cerebellum may sometimes be mistaken for meningitis, and cases of acute polioencephalitis have been reported in which a similar error was made.

Hysteria in children is said by French writers occasionally to simulate meningitis. These cases rarely, if ever, occur in this country, but one has heard of more than one instance in which a child suffering from some other illness has been so potently drugged with alcohol as to produce a state of intoxication, which has temporarily misled the physician to a diagnosis of meningitis.

Such conditions as retropharyngeal abscess, tonsillitis, or even teething, have been known to produce marked head retraction and other cerebral signs, arousing a strong suspicion of meningitis.

The exanthemata, particularly scarlet fever, are sometimes ushered in by vomiting and signs of cerebral irritation, which may lead for a time to an error of diagnosis, and the same danger exists with regard to some of the pyaemic and septicaemic states.

In addition, a number of cases occur in which all the symptoms of cerebral irritation are present, and, every other possible cause having been excluded, a diagnosis of inflammation of the cerebrospinal membranes is arrived at. Then, for some unknown reason, the temperature falls, and the child recovers completely. It is possible that some of these cases are influenzal, and, in type, related to those I have already described; or it may be that in some instances they represent cases of recovery from a mild or localised meningitis. At any rate, a number of such cases remain unexplained, and are catalogued in hospital records as cases of "pseudomeningitis." The following case well illustrates this condition:

CASE 9. *Pseudomeningitis.*—A female child, aged 20 months, was admitted into the Hospital for Sick Children, Great Ormond Street, in December, 1903, under the care of Dr. Batten. Six weeks before admission she fell downstairs. There were no symptoms for a week, when she became drowsy and developed a rash "like measles" all over her body. This lasted for twelve hours and then entirely disappeared. A few days later the child began to scream and put her hands to her forehead. Excepting during the attacks of screaming, she seemed unconscious. Her eyes were kept wide open but she appeared to be blind. The head was retracted and the neck stiff. After a week she improved, regaining her sight and recognising her mother, but she was still sensitive to light and noise. She was unconscious for the greater portion of the second and third weeks of the illness, and was then brought to the out-patient department. At first she improved a little, but during a few weeks there was rapid wasting, much vomiting, and intense headache. There was never any discharge from the ears. Her past and family history were unimportant. On admission the child was found to be pale and emaciated. She lay curled up on her side and was extremely irritable. The hands were constantly put to the forehead in evident pain. She uttered frequent shrill cries. The neck was stiff but not retracted. There was slight stiffness of the legs. No ocular changes were present and the child could see well. The ears were healthy. The knee-jerks were active; otherwise the reflexes were normal. Kernig's sign was absent. The fontanelle was closed and the head not enlarged. The tongue was clean, and the abdomen neither distended nor retracted. The temperature was 98° F., the pulse 160 per minute, and slightly irregular.

During the first week in hospital these signs were maintained almost unchanged. The temperature was irregular, oscillating through a range of 4° F. There was frequent vomiting. The diagnosis lay between meningitis and a cerebral abscess (without any localising signs). Then the temperature fell to 98° F. and henceforward remained at the normal. The general condition rapidly improved; the child gained 2 lbs. in weight, and in another week she was sent home perfectly bright and well.

It is thus evident that there are a number of conditions which may simulate meningitis so closely as to puzzle, not alone the general practitioner, but also the physician who has had opportunities for the special study of disease in childhood. It is probable that in a large number of these cases the cerebral symptoms are caused by some toxic irritant produced in the course of the disease. A number of the cases I have related were, of course, eventually correctly diagnosed after they had been under constant and trained observation in hospital for a longer or a shorter period; but even under these advantageous circumstances a few of the cases were never clinically diagnosed from meningitis. The difficulties must be enormously greater to the general practitioner who sees his cases only at intervals, and for a larger portion of his information as to the course of the case has to rely upon the statements of unskilled observers. It is necessary for us, therefore, to carefully consider the history and symptomatology of every case and to avail ourselves of all possible means of physical investigation.

The *history*, as is evident from the cases I have described, is frequently misleading. An account of some accident at varying periods preceding the onset of the illness forms one of the commonest features of the mother's statement and may frequently be disregarded. On the other hand, a history of illness such as influenza amongst the inmates of the household is of some importance. Frequently in cases of true tubercular meningitis one is told that one of the parents is suffering from phthisis—a common story is that of the father dying of consumption who is fond of the baby and always nurses it. This has an important bearing upon the case when the child is soon afterwards taken ill with meningeal symptoms. A history of the state of the bowels must always be elicited, but is, unfortunately, of little diagnostic value, as typhoid fever in children, as well as tubercular meningitis, is characterised by this constipation rather than by diarrhœa. Delirium marks the onset of so many pyrexial conditions in childhood as to be of little value. The history of the existence of somnolence is perhaps of no greater importance. Headache in itself does not form a reliable guide, but headache which accompanies and exists during somnolence becomes to my mind a much more suspicious symptom.

The information yielded us by individual *physical signs* is equally unsatisfactory. Kernig's sign is really of little diagnostic import. It is certainly present in a large percentage of cases of true meningitis, but it may also occur in a number of widely different morbid conditions, such as pneumonia, uraemia, enteric, etc. On the other hand, it is frequently absent or not observed in cases of true meningitis. In many cases it is present only at certain periods of the disease, and if any stress is to be laid on the sign it must be looked for daily. Tache cérébrale is of still less value, for it is present in a large percentage of children suffering from trivial pyrexial and other disorders. Head retraction is of importance only when it is very pronounced, as is often the case in posterior-basic meningitis. In a lesser degree it may be the result of a number of trivial conditions. The pulse rate is worthy of accurate observation, for it sometimes teaches us a great deal. In most febrile diseases the pulse follows the temperature, and slowness of the pulse with a high temperature strongly suggests a cerebral lesion, although it does not serve to differentiate meningitis from other cerebral affections. The urine, naturally, should be examined frequently in every case, for the discovery of abnormal constituents such as albumin or tube casts would greatly aid the differential diagnosis between meningitis and uraemia. A negative result is less valuable, as is shown by Case 8. An examination of the optic fundus should never be omitted. Here, again, a negative result is of little diagnostic value, for posterior-basic meningitis commonly runs its course without the production of changes in the disc, and the same is not infrequently the case in tubercular and septic meningitis. The existence of optic neuritis, or distension of the veins and blurring of the discs, may occur in a number of other diseases besides tubercular and suppurative meningitis. Choroidal tubercles are sometimes seen and are confirmative of tubercular meningitis, but it is necessary to make quite sure that what is seen is actually a tubercle. Dr. George Carpenter* has recorded a case of ulcerative endocarditis mistaken for tubercular meningitis, in which there was pronounced optic neuritis and what was believed to be a tubercle of the choroid; at the autopsy no trace of tubercle was found in any part of the body. Squint and nystagmus serve merely as confirmatory signs, for nystagmus occurs in several conditions in childhood, and it is often difficult to be sure that a strabismus was not present before the onset of the illness. Inequality of the pupils is not infrequently met with in healthy children. An examination of the chest and abdomen should always be carefully undertaken in the search for evidences of enteric fever or tubercular lesions. In this connection it may be well to refer to the extreme frequency with which a condition of slight bronchitis characterises the early stages of typhoid fever. The condition occurs so frequently as to constitute a valuable confirmative sign of that disease. The ears should be inspected in every case: they will frequently be found the seat of mischief, the treatment of which will remove all cerebral signs. In doubtful cases one sometimes sees puncture of the membrane, even when no obvious ear disease existed, followed by an immediate subsidence of all the cerebral symptoms. A Widal is indicated in every case in which there is a tumid abdomen, enlarged spleen, or any other suggestion of enteric. It is important to repeat the process on several occasions, for clumping does not occur during the earliest stages of the disease. It must also be remembered that a positive result does not exclude meningitis. The clumping action of the blood serum from a case of typhoid persists for a considerable period after the disease is over, and the patient may have had enteric previously, and since have developed meningitis. Quincke's lumbar puncture is so easily carried out that it should be undertaken as a matter of routine. The cerebro-spinal fluid is normally clear and translucent; definite cloudiness or opacity signifies an inflammatory process, and generally indicates suppurative meningitis. In posterior basic meningitis the fluid may be very slightly cloudy, but is generally quite clear. In tubercular meningitis the fluid is usually clear. It may also be quite clear in suppurative meningitis if the passages from the cerebral ventricles to the subarachnoid space should be occluded. Film preparations should be made from the fluid, and, after staining, examined for the presence of organisms. These films may be further subjected to the process of cytodiagnosis, *i.e.* the cells present counted and differentiated. Normally the fluid contains few or no cells. In tubercular meningitis there is usually an excess of mononuclear cells. In suppurative meningitis the polymorphonuclear cells preponderate. In posterior basic meningitis there is usually slight excess of polymorphonuclear over the mononuclear cells. The fluid may also be submitted to bacteriological examination. It is naturally sterile. In tubercular meningitis the tubercle bacillus is sometimes found, but, as is the case with all tubercular exudates, the fluid is more frequently sterile. In the other forms of meningitis the causative organism can frequently be cultivated from the fluid—unless the passages from the cerebral ventricles to the subarachnoid space of the cord are blocked, when the cerebro-spinal fluid may be sterile.

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* 'Reports of the Society for the Study of Disease in Children,' vol. ii, pp. 203-216 illustrated.

Lastly, the examination of the blood must not be neglected. Normally the number of leucocytes in the blood of a child does not exceed from 10,000 to 15,000 per cubic millimetre, of which from 45 to 65 per cent. (according to the age) are polymorphonuclear cells. A count of over 25,000 or 30,000 leucocytes per cubic millimetre is strongly suggestive of a suppurative process, particularly if the majority of the cells are of the polymorphonuclear variety. In tubercular and posterior-basic meningitis the blood examination is of less differential value, for we obtain an almost similar picture in the two diseases. The total number of leucocytes in both ranges from 15,000 to 25,000 per cubic millimetre, and the differential count shows usually 30 to 40 per cent. of polymorphonuclear cells in tubercular and 45 to 55 or 60 per cent. in posterior-basic meningitis. A differential count of the blood is also of use in the diagnosis of trichinosis and intestinal parasites, for in these conditions we frequently find a relative increase in the number of the eosinophile cells.

It is evident, then, that we possess no single sign which will enable us to differentiate a case of meningitis from another disease with cerebral symptoms. By carefully considering the history and symptomatology, and correlating to these the information which we obtain by the physical examination of the case, it should, however, in the majority of cases be possible to arrive at a correct conclusion. Meningitis should definitely be assumed only when the symptoms are not alone initial but last till death.

In conclusion I would express my indebtedness to the members of the Medical Staff of the Hospital for Sick Children, Great Ormond Street, for permitting me to use the valuable clinical material with which I have endeavoured to illustrate this article.

SUDDEN AND UNEXPECTED DEATH IN CHILDREN FROM A SURGICAL POINT OF VIEW.*

By A. H. Tubby, M.S.

When I was honoured by an invitation to open a discussion on this subject, I accepted it readily because of the opportunity it afforded me to be of some service to The Society for the Study of Disease in Children; and the subject is one which necessarily entails a considerable amount of reflection on records of cases; and it is a stimulant to inquiry as to whether those fatal results which have occurred suddenly can in future be avoided.

The title of the discussion appeared at first sight to be perfectly clear, and with very definite limitations, but when I came to examine more closely into its meaning, I was somewhat puzzled. Does it imply that the subject is to be treated under two headings, "sudden" and "unexpected" death, or is "suddenly unexpected death" meant, or "unexpectedly sudden death"? I have ventured to take the last named as the interpretation of the Society's wishes in treating this question.

Even from this point of view the matter is a wide and difficult one to place clearly before you. In a discussion which must necessarily range over the whole domain of surgery some systematic method of treating it must be found. With the ancients it was a doctrine that various organs might in different cases be called the *atria mortis* or portals of death, yet in practice we find that death is due to three causes: arrest of the heart and circulation, arrest of the respiration, and arrest of the action of the brain. If, as the late Dr. Hilton Fagge pointed out, the only logical way of dealing with the question is to recognise those forms of death due immediately to conditions which lead directly to the extinction of life, we find that the last named cause, the action of the brain, is dependent upon the other two. And in sleep, the only obvious indications of life are the movements of the chest-walls and the action of the heart; thus we recognise that death—whether it be sudden or not—is ultimately due to one of these two conditions. There are, however, many avenues leading up to these portals, and in order to give what I hope may be a fairly intelligible account of the subject, I propose to discuss it under the following headings:

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* Read before The Society for the Study of Disease in Children, December the 16th, 1904.

I. Circulatory Conditions.
II. Shock.
III. Toxic Conditions.
IV. Infective States.
V. Mechanical Causes.
VI. Conditions Markedly Referable to the Nervous System.
VII. Rare and Unusual Causes, not included in any of the above.

I. CIRCULATORY CONDITIONS.

These include: (*a*) abnormal conditions of the blood, whether states or diseases; (*b*) hæmorrhage, which may be not unfairly designated as spontaneous; (*c*) hæmorrhage after operation; (*d*) thrombotic and embolic conditions.

(*a*) Under Blood Conditions, whether States or Diseases, we must, beginning with the earliest days of life, speak of hæmophilia neonatorum. Congenital stricture or obliteration of the bile-ducts necessarily causes jaundice in infants. Some of the children succumb shortly after birth from persistent hæmorrhage from the umbilicus and intestinal canal; while those who survive may live a few months, giving time for hepatic cirrhosis to be established, which is ultimately fatal by intestinal and other hæmorrhages. In other newly-born children hæmorrhages are due to congenital syphilis* or to pyæmic infection of the stump of the umbilical cord.†

True hæmophilia manifests itself very frequently in children, and a blow, an injury, or a simple operation may, on account of the loss of blood which it induces, give rise to fatal consequences. It is not necessary to recall instances where the extraction of a tooth, the removal of a tonsil, or a single tenotomy have resulted disastrously; but in those who are constantly dealing with the diseases of children, especially when calling for operation, it is of the utmost consequence to inquire into the family history when such cases are presented to one for treatment, as this important point may be overlooked. It has often happened that the parents have volunteered information that the child very "easily bruises," and this has put us on the *qui vive*, and probably saved us from disaster. In hæmophiliac children a slight blow on the head has given rise to hæmorrhage on the surface of the brain, or into the substance of the medulla, which is necessarily fatal.

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* Fichel, 'Archives f. Kinderheilkunde,' Bd. vii.
† Neumann, Ibid, Bänder xii, xiii.

With the onset of serious symptoms of infantile scurvy, or so-called scurvy rickets, widespread hæmorrhages manifest themselves with extreme suddenness. I can remember being called to see a child of the age of ten months, who had been brought up on patent foods, and presented an extremely yellow, cachectic appearance. He had had pain for four days at the lower end of the shaft of the left tibia, and was apparently going down hill rapidly. The diagnosis lay between subacute periostitis and infantile scurvy; but the temperature, instead of being raised, was subnormal. No other signs of hæmorrhage were present. An exploratory puncture settled the question. With very careful feeding, the child, although apparently dying at the time of being seen, ultimately made a good recovery. But, unfortunately, the course of the disease is not always so simple as this. Hæmorrhage may occur beneath the periosteum of many bones, or from the kidneys or alimentary canal, and from its volume and persistence may result in death. Even a localised hæmorrhage in vital spots, such as on the surface of the brain, has terminated thus.

(*b*) In discussing the subject, I take it we may allude to cases in which the condition, if not recognised, would certainly have led to suddenly unexpected death, and the object of such a discussion as this is to place more clearly before us the preventable causes. It therefore follows that those cases which go very near death, but are saved, must prove quite as instructive to us as those which are not. Under the heading of Spontaneous Hæmorrhage, it is allowable to include, in addition to those mentioned above, the cases which succumb from an ulcer in the stomach or duodenum, or from tubercular ulcers in the jejunum.* Umbilical hæmorrhage has already been alluded to, and its causes have been assigned as syphilis, pyæmia, and lesions of the bile-ducts and liver. Hæmorrhage from the genital organs is also due in newly-born children to these causes, or it is possible that it may be traceable to the presence of a calculus, and by its persistency may exhaust the infant. More formidable in older infants and children is a profuse flow of blood, due to sloughing of the pharynx and tonsils, a complication of scarlet fever of a severe type. Noma may spread to this region, and end in the same way.

(*c*) Fatal hæmorrhage in connection with and after operation is a somewhat sensational branch of our inquiry. It is preventable, and if it occurs must necessarily cause the surgeon the keenest anguish.

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* Cases recorded by Goodhart and Sawtell, Ashby and Wright, 'Diseases of Children,' 4th edition, p. 70.

Some want of thoroughness, even in the simplest operation, such as circumcision, in securing the frenal artery, has several times led to the sacrifice of the child's life. Bleeding occurring while under the anaesthetic is treated as oozing, and a little pressure is applied. The child recovers from the effects of the anaesthetic, either on its way home or at home, bleeding starts afresh, and the parents, not recognising the dangerous effects of even a comparatively small loss of blood on infants' lives, hesitate or are unable to get assistance, and the child succumbs. It is on account of this susceptibility of a small baby to any loss of blood that the greatest care should be taken in hare-lip operations. More formidable and more difficult cases are those involving wide removal of tubercular glands in the neck, or of hygromata. It often happens that the glands surround closely the vessels in the carotid sheath, and I am acquainted with a case in which death followed profuse hæmorrhage, from wounding of the jugular vein near the base of the skull. In another instance a large hygroma was operated on in a child aged 2 years. The cyst had ramified in all directions, and presented extreme difficulties in its removal. During the operation much hæmorrhage occurred from the wounding of some large veins at the root of the neck. These were secured, and the child was placed back in bed, but he never rallied from the operation. I am inclined to think that some of these preventable deaths are due to what may be styled an attempt at brilliancy in operation, and personally I do not think that brilliancy in surgery is good for a patient. What is wanted is thoroughness and care, and attention to every minute detail which will contribute towards the successful termination of a case.

The introduction by Mr. Morant Baker of his india-rubber tracheotomy tube effected a revolution in the after-treatment of this operation. The prolonged retention of a metal tube is known to have caused ulcers of the trachea, and perforation of the innominate vein or artery. Later, in connection with tracheotomy, I shall have to allude to another cause of sudden death.

(*d*) Thrombosis and embolism are responsible for some tragic events, notably during the injection of nævi with perchloride of iron and other substances, or during electrolysis. There is a well-known case of nævus in the eyelid, which a surgeon elected to treat by the injection of a solution of perchloride of iron. Immediately after the injection the child gave a gasp, and fell back dead in its mother's arms. While dealing with the matter of thrombosis and embolism, their influence in determining a fatal result in the course of acute appendicitis or abdominal affections must not be overlooked, more especially as the clots themselves are septic, and are the source of metastatic deposits elsewhere, or even are the cause of the sudden development of brain abscess.

II. Shock.

It is quite true that a good many of the cases which are put down to Shock should be more rightly ascribed to hæmorrhage, but, excluding such, we may discuss the question of shock under the following headings: (*a*) Cold, exposure, and undue delay in operating; (*b*) emptying cavities filled with fluid too rapidly; (*c*) washing out cavities.

(*a*) With reference to cold and exposure in operating, their effects are more particularly seen in operations for intussusception, intestinal obstruction, and laminectomy. An operation for intussusception should not occupy more than twenty minutes, and the utmost rapidity should be used in ascertaining the cause and if possible removing the source of intestinal obstruction. In a different connection I may quote a case of intussusception under the care of my colleague, Mr. Abbott, at the Evelina Hospital. The child was aged 3½ months, and the intussusception was reduced twenty-four hours after its onset. The child did well for one day, and then died suddenly. At the post mortem the thymus was found large, and very solid, and extending three quarters of the distance down the front of the pericardium. In laminectomy the exposure of the cord itself, particularly in the cervical and cervico-dorsal regions, is accompanied by profound nervous shock, and any aggravation of this by preventable exposure of the patient to cold is apt to be fatal. Attention to such small details as wrapping the child's limbs and that part of the body outside the field of operation in cotton-wool and flannel, and having the operating table properly warmed by hot water, will, more often than is recognised, turn the scale in favour of the patient. More pointedly these remarks apply to operations on rickety children, on account of their liability to bronchitis and broncho-pneumonia.

(*b*) *Emptying cavities filled with fluid too rapidly.*—The observant anæsthetist will often report to the surgeon that at the moment of opening a pleural cavity filled with fluid or pus a distinct change takes place in the force and frequency of the pulse, which is lessened in both directions, and it has not seldom happened that we have been compelled to stop the flow of fluid while the equilibrium of the circulation is being restored. Precisely how this sudden change for the worse comes about we do not know, but arguing from the extensive displacement of the heart and large vessels which gradually occurs in these cases, any sudden restoration of these important parts to their normal position must embarrass their action. It may be that kinking of the large veins takes place, and the heart is deprived of its blood supply or the cause is a profound dilatation of the vessels inside the chest on account of the release from pressure. But whatever the cause may be, the shock is often profound, and taxes the energies of both surgeon and anaesthetist. The moral, of course, is obvious.

(*c*) *Washing out cavities.*—The remarks I am about to make on this point apply particularly to washing out the pleura and the cavities of large abscesses, such as psoas. Many years ago, when I was clinical assistant and house physician to the late Dr. Moxon, he impressed upon us the danger of washing out the pleural cavity after evacuating an empyema. He recalled two cases of sudden death where this had happened. I can recall an almost fatal result in a patient under the care of a colleague of mine who evacuated several pints of pus from a psoas abscess. My colleague then proceeded to wash out the cavity with some 1 in 40 carbolic acid solution. Immediately the fluid was injected the patient became blue and extremely collapsed. It is true that he did not die, but he was only just saved from death by the injection of strychnine and brandy, and lowering the head, and by a vigorous employment of artificial respiration.

Being myself much impressed by these cases, I undertook about seven years ago a series of investigations and experiments. These have only been published in brief in the 'British Medical Journal,' 1896, but I may here detail them more fully. The animals selected were dogs. Under the usual aseptic precautions an aperture was made into the chest, and the vertical limb of a Y-shaped glass tube inserted, and carefully tied in. To the oblique limbs indiarubber tubing and clamps were attached, so that it was possible to inject and withdraw fluids. It was found that if sterilised salt solution at a temperature of 99° F. were injected, a temporary and transient fall of slight character occurred, both in the blood-pressure and rate of respiration. Sterilised water produced a greater effect, boracic acid solution still more; while with even a small quantity of iodine solution (ʒj. of tincture of iodine to the pint of water) the fall of blood-pressure was both rapid and great, and in some cases the animal succumbed at once, and in others it was only restored with difficulty by the rapid removal of the fluid from the pleural cavity and the employment of strychnine and artificial respiration. Most striking of all were the effects of a 1 in 40 solution of carbolic acid. This acted as certainly and as rapidly as a dose of hydrocyanic acid. The fall of blood-pressure was instantaneous and irrecoverable. It therefore seems that it is not the mere mechanical act of introducing fluid, but it is the chemical nature of the fluid, and this acts by reflex effect through the very wide and sensitive pleural surface upon the cardiac and vaso-motor centres in the medulla. In my opinion it is therefore better to abstain from washing out the pleural cavity.

III. Toxic Conditions which are responsible for Unexpectedly Sudden Death.

These may, from a surgical point of view, be discussed under the headings: (*a*) Chemical poisons and irritants; (*b*) toxic poisons.

(*a*) Of the chemical poisons and irritants most in common use we have carbolic acid and iodoform. With reference to carbolic acid, I strongly maintain that it should never be used as a compress to an infant's or child's skin before an operation. Most untoward results have followed its application. Intense erythema, vesication, sloughing of the skin, and even gangrene, have followed locally; while the absorptive power of a child's skin is such that fatal cases of carbolic poisoning and suppression of urine have ensued. It is, therefore, preferable, I find, to use a weak solution of biniodide of mercury (1 in 3000 or 4000), and not to have the compress on for more than two hours before operating. An infant's or child's skin has neither the horny character nor is it a receptacle for ingrained dirt as in the case of an adult, and it is therefore very readily cleansed. Certain infants are very susceptible to iodoform, and it appears to be more readily absorbed from some situations than from others. More particularly is this the case in the bladder, and the use of iodoform here has resulted in fatal absorption.

(*b*) *Toxic poisoning.*—In this connection it is my desire particularly to allude to some cases of sudden death in patients, especially children, who, according to the canons of our art, ought to have done well, after a timely and well-planned operation for appendicitis. I can recall at least three such cases which ended unexpectedly and suddenly to the great distress of the parents and the surgeon. One was that of a boy aged 13 years, whom I was asked to see in one of the suburbs of London. He had been ill for some days, and when I saw him there were distinct signs of appendicitis, and indications of the presence of pus. I therefore operated, and found a thickened, but not perforated, appendix situated in a peritoneal pocket, with about half a teaspoonful of thick pus surrounding it. The pus was carefully sponged away, and the appendix removed, as it was quite easy to do so. The boy was much improved by the operation, and everything promised well, but sixty hours afterwards he attempted to raise himself in bed, and fell back dead. Another very similar case occurred in my practice last summer, except that the onset was more acute, and the septic symptoms were more pronounced. This child survived till the third day, and then, at nine in the morning, became suddenly collapsed, and died in five minutes. A third case was that of a young girl, who had had pain in the abdomen on a certain Friday, and went to bed on account of it. She was much better on the Saturday and Sunday, and on the Monday morning she asked for the daily paper. While sitting up in bed reading it, she suddenly fell back dead. In this case the appendix was found to have sloughed entirely. These are striking and lamentable instances of suddenly unexpected death, and they are difficult to explain. It is curious to note that in two of the cases the quantity of pus was small, and after its removal the patient seemed to be doing well until the fatal event occurred. It therefore seems that a poison of a particularly active nature, and of a cumulative effect—probably on the cardiac centres—develops and kills the patient. When I have had reason to suspect that such is likely to occur, or is occurring, I give directions that the patient shall be freely plied with digitalis, strychnine, and alcohol.

Uræmic poisoning is in children, as in adults, the cause of unexpected death after operations otherwise quite safe in themselves. Messrs. Ashby and Wright allude to a death after osteotomy, associated with granular kidney; and simple operations, such as for nævi or harelip, not seldom terminate suddenly from this cause. It is more easy to understand that the impaction of a calculus in a child, giving rise to extravasation of urine, will, unless thoroughly and radically treated, result in death.

IV. Infective Conditions.

I propose to speak of the following diseases: tubercle, tetanus, acute œdema of the tissues of the neck, acute malignant œdema, and pyæmia.

As to tubercle, in several children's hospitals there are, I believe, notes of cases in which an operation has been done for the removal of a tuberculous lesion, and where, within two or three days, either acute tuberculosis or tubercular meningitis has developed. In looking over the notes of Mr. Abbott and myself at the Evelina Hospital for the past four years, I find two such cases, and it seems to me that such an untoward event is particularly likely to occur in operations on bone and the scraping of tubercular glands. In bone cases vessels which cannot contract are opened at the time of operation, and are therefore ready to receive direct implantation of tubercular material; and in gland cases the lymphatic channels are disturbed, and lymphatic thrombosis and embolus result. But I am anxious to allude further to another matter, and this, I fear, trenches somewhat upon the part in opening the discussion which has been allotted to my friend Dr. Blumfield. In two instances which came under my observation, where a simple operation was performed for a non-tubercular lesion and signs of old phthisis were present in the lung, acute tuberculosis followed. Now, I observed that in both these cases gas and ether were given, and in both the anæsthetic was, so to speak, rushed into the patient. During the early part of the administration the patients became very congested and bluish-black. It therefore seems to me that I am not unreasonable in ascribing the death to the anæsthetic; and the history of events is probably that, in the struggling during the asphyxial stage of the anæsthetic, small portions of tubercular material were dislodged from the pulmonary arteries or veins, and were freely distributed throughout the circulation.

Tetanus in new-born children, due to infection of the umbilical cord by dirty applications, is, fortunately, almost a dream of the past, and needs but a passing notice.

Acute œdemata present many points of interest, and I must allude in the first instance to that condition of acute inflammatory œdema of the neck which is designated by the name of angina Ludovici. It is particularly prone to occur after certain forms of tonsillar and pharyngeal inflammation, in association with perichondritis of the larynx, alveolar abscess of the jaw, and very rapidly follows the bursting of a suppurating gland beneath the deep fascia of the neck. In fact, there is no form of inflammatory œdema so explosive as that due to the last-named cause. Further, this œdema is frequently complicated by œdema of the glottis. Some of us have doubtless watched these cases very closely, and have been in constant attendance to perform laryngotomy or tracheotomy. A rare form of œdema is the acute malignant œdema of gangrenous emphysema which supervenes occasionally, especially in cases of fracture. I have seen two such cases, one which was almost fatal, and the other where the course of the disease was arrested early. The first case occurred in a young girl, aged 10 years, who fell down in a disused fowl-house, and sustained a compound fracture of the left fore-arm. The medical attendant, Dr. Southey Wright, very carefully cleansed the parts, and put the fore-arm up in splints. Twenty-eight hours afterwards he was called to the patient on account of extremely severe pain. He took the splints off, and examined the site of fracture. It was then found that an ichorous discharge was issuing from the wound, and the parts around looked white and dry. He administered an opiate, and wrapped the limb up in cotton-wool. The next morning he was called early, and found the hand was gangrenous and gaseous. By mid-day the limb was affected as far as the elbow. I arrived about two o'clock, and the gangrene was extending to the shoulder. There was a large copper-coloured patch, the size of one's hand, on the left flank. Amputation was at once performed just below the shoulder, and as I happened to be acquainted with the fact that to the development of the bacillus of malignant œdema the presence of the Streptococcus pyogenes aureus is very favourable, I recommended the injection of antistreptococcic serum into the shoulder and the middle of the discoloured patch on the flank. A rapid improvement set in, and the patient recovered. The second case is that of a boy under my care at Westminster Hospital. He sustained a compound separation of the lower epiphysis of the left radius, due to the explosion of a firework. On the third day a like ichorous discharge and evil smell were noticed as in the preceding case. Antistreptococcic serum was at once injected, and the hand placed in a bath. The boy has now recovered. Cultures from the discharge developed gas.

Pyæmia in children is often rapidly and unusually fatal. In infants umbilical arteritis is often followed by general infection, and it not infrequently supervenes after lithotomy and lithrotity operations; but the most prolific source of pyæmia is acute necrosis of bone, where it is remarkable how soon after the onset of the disease general systemic infection takes place. I have known a child to die within forty-eight hours from the onset of the disease, with general infection.

Sometimes as a result of septic infection the simplest cases of operation assume the worst possible aspect. Thus, one case, in which an operation had been performed for adenoids, came under my notice, in which cellulitis of the neck followed, and was succeeded by double empyema, which caused the death of the child; and I also came across another case, in which a single empyema developed, but the child recovered.

V. Mechanical Conditions.

The entrance of foreign bodies into the air-passages. The immediate results depend upon the size and nature of the foreign body. If it be of such a nature, such as a large piece of meat, and of sufficient size to block at once the aperture of the glottis, the child does not exhibit the usual symptoms of asphyxia, but drops down as if shot, and forthwith dies. If, on the other hand, the offending substance be such as to partially block the laryngeal orifice, symptoms of asphyxia are extremely well marked. Unless the patient be eating at the time, and one of the bystanders be possessed of sufficient presence of mind to remove the foreign body from its situation, death may ensue without anybody being aware of the exact cause of it. In connection with laryngeal diseases, papillomata of the larynx may attain such a size and growth as to cause sudden asphyxia, owing partly to a valve-like action they have on the orifice of the larynx and the setting up of expiratory spasm.

The difficulties which occur in some children in inducing them to do without the tracheotomy tube are sometimes very serious. I recall the case of a small boy in Guy's, to whom we were frequently called, to rescue him from impending death, owing to laryngeal spasm coming on when the tube had been taken out in order to accustom him to breathing without its use. Eventually, by patience and perseverance, he was enabled to do so. I equally well recall another case at the same institution whom we restored several times by artificial respiration from a similar predicament, but who eventually succumbed to a spasm of this nature. And while speaking of affections of the respiratory tube I may allude to the sudden and often fatal dyspnœa caused by the pressure of a caseous gland upon the trachea or bronchi, and the effects of the bursting of such a gland into the lumen of those structures. The influence of a large thyroid and persistent thymus have been dealt with by my predecessors in this discussion. But I may here mention the case of a boy, aged 15 years, the subject of exophthalmic goître, who was admitted into Westminster Hospital with the following history:

Enlargement of the thyroid gland began five or six weeks before admission, and he was treated with iodide of potash for a few days, and then sent home. He was readmitted on account of an attack of dyspnœa. Whilst waiting for operation he had a severe attack of this kind, and died before relief could be afforded. At the post-mortem examination œdema of the lungs was found, together with a large persistent thymus.

More or less mechanical conditions, dangerous to life, arise in connection with displacement of one or other of the cervical vertebræ. Such a case was under my care at the Evelina Hospital, in which, owing to congenital displacement of the fourth and fifth cervical vertebræ, whenever the child's head was allowed to be flexed forwards, alarming dyspnœa occurred. While it may be argued that the dyspnœa here was not entirely of a mechanical nature, yet no dispute can arise as to the cause of death in the following case: A small boy had been operated on for hare-lip, and, as the custom is, the hands had been tied down to the side, to prevent him from irritating the wound. At night this child was found lying prone with his face buried in the pillow, and the only appearances revealed by the post-mortem examination were those of asphyxia.

VI. Conditions referable to the Nervous System.

Instances of this will occur to you all. I have already alluded to hæmorrhage on the surface of the brain in hæmophilia, and I may here take the opportunity to remark on the effects of a hæmorrhage during the act of birth, arising from difficulties in the delivery of the head. It is comparatively seldom that the hæmorrhage is so extensive as to cause death. Unfortunately, many of these children survive to become quite hopeless cases of infantile spastic paralysis or cerebral diplegia. The most usual cause of sudden death in children, arising from a brain lesion, is the bursting of a cerebral abscess into the lateral ventricles, or the rupture of a cerebellar abscess. Such cases are familiar to you, and I need not therefore give illustrations. The sudden escape of cerebro-spinal fluid is often responsible for a condition which is irrecoverable. On looking over various recorded cases, I find the notes of a child, the subject of cerebral abscess, which was successfully evacuated. At the dressing next day the gauze plug was removed, and with a pair of dressing forceps a second one was inserted, but in doing so there was a sudden escape of cerebro-spinal fluid. The child became collapsed, and died in a couple of hours. What had taken place is quite obvious—the lateral ventricle had been opened.

In the operation of laminectomy, if the cord be pressed very firmly against the laminæ, the attempt to insert even a probe beneath the bone and the cord was, in one of my cases, followed by such sudden collapse that I had to desist from the operation, resort to artificial respiration, and put the child back to bed. Subsequently we were able, by the application of vigorous stimulants before the cord was reached, to complete the operation successfully.

Speaking once more of the escape of cerebro-spinal fluid, reference may be made to a case of spina bifida, with a large nævus over it. The surgeon, not recognising the presence of a spina bifida under the nævus, attempted a rapid operation on the nævus, and excised it. Much cerebro-spinal fluid escaped, and the child died very shortly.

VII. Rare and Unusual Causes.

One of these is the sucking of air into veins in operation upon the neck for the removal of tubercular glands, and I may here remark that it may occur when the external jugular vein is wounded, as well as when the internal or subclavian veins are injured. A case of nearly fatal results of wounding the external jugular vein during this operation came under my notice only last week.

And, finally, I may refer to the dangers of acute peritonitis arising from an inflammation of a retained testis in the abdomen, the presence of salpingitis in little children, associated with gonorrhœa and the sudden inflammation, suppuration, and bursting of a dermoid cyst.

These, then, gentlemen, are some of the causes of suddenly unexpected death in children. I am quite conscious of the sins of omission in dealing with the details of this very wide subject, but I am equally conscious that I have your indulgence in my imperfect attempt to bring the subject before you, and I trust I have raised such points as will evoke a discussion profitable to all of us.

A CASE OF DERMATITIS GANGRÆNOSA INFANTUM THE *BACILLUS PYOCYANEUS* IN THE LESIONS.

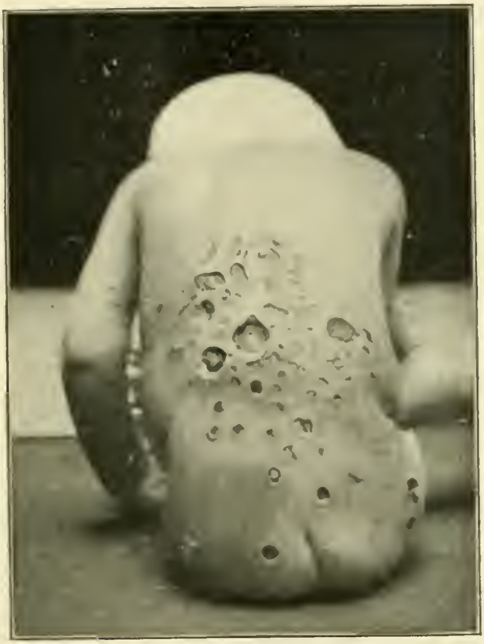
By H. G. Adamson, M.D., M.R.C.P.,

Physician to the Skin Department, Paddington Green Children's Hospital.

I am indebted to Dr. W. A. Wills for his kindness in allowing me to see the following case and for his permission to publish the notes and the photograph here reproduced.

"The patient, a child aged 1 year, was brought to the North-Eastern Hospital for Children on November the 11th, 1904, and was at once admitted under the care of Dr. Wills. The child was extremely ill. The mother gave a history of the child having had varicella five or six weeks ago, of which she got well. The skin condition had begun a fortnight previously to the time of admission."

Note of the skin condition by myself: "The skin lesions are generalised, but for the most part grouped over the lower part of the back and loins. Over this area there are a dozen circular-punched-out ulcers and smaller lesions irregularly scattered between and around the larger ulcers. There is a large ulcer also upon the abdomen with smaller lesions around. There are smaller ulcers and scabbed lesions on the face, arms, and legs. The vertex of the scalp is a mass of scab, hiding all lesions.



"The fully-developed lesions consist of circular punched-out ulcers, varying in size from that of a threepenny-piece to that of a florin. The sides of the ulcers are perpendicular and extend through the whole thickness of the skin; the base of the ulcer is in most instances partially covered by a central dry blackish adherent disc, apparently the dried-up remains of the portion of skin that has sloughed. The ulcers are dry and show no discharge except a little moisture on lifting up the central crust. Each ulcer is surrounded by a narrow inflammatory halo, and the extreme margin is slightly raised as a circular ridge. The smaller lesions are split-pea-sized to sixpenny-piece-sized circular infiltrated patches with adherent scab. No actual vesicles nor bullæ are seen. There are no lesions in the mouth. There is a foul-smelling greenish purulent discharge from the left ear."

"At 8.15 p.m., on the evening of admission, the child suddenly became collapsed, blue, and breathing with great difficulty. In spite of brandy and strychnine and artificial respiration it died ten minutes later.

"At the autopsy the next day nothing was found to account for the sudden death. There was no evidence of thrombosis or embolism of the pulmonary vessels. The cortical veins of the brain were much injected. There was no thrombosis of any cerebral sinus."

Bacteriological examination.—Cultures on various media were made from the serous fluid beneath the crust at the base of one of the larger ulcers and also from beneath the scab covering a small unulcerated lesion. Mixed growths were obtained from which were isolated a *staphylococcus* and a *streptococcus* and the *bacillus pyocyaneus*. The *bacillus pyocyaneus* was present in the early lesion and in direct stroke cultures on serum it made its appearance as isolated liquid greenish-coloured areas here and there along the line of the more abundant staphylococcic growth. In the older lesions the *bacillus pyocyaneus* was present in great abundance, the growth of this organism rapidly swamping all other growth. Characteristic cultures were obtained upon potato. On agar the whole medium rapidly turned bluish-green and showed a metallic lustre on its surface. The bacillus was also found in the discharge from the ear. I was, unfortunately, not present at the post-mortem examination, so that I was unable to examine the heart's blood for micro-organisms.

Cases of Dermatitis gangrænosa infantum are not of very common occurrence, but they are well known, more usually as a complication or as a sequela of varicella, sometimes as an independent affection. The particular interest of the present case, and that which has induced me to publish this short note, lies in the fact that the *bacillus pyocyaneus* was found in the lesions. It may easily be said that this is of little significance, since one would expect to find all sorts of micro-organisms in such lesions. The presence of this organism has, however, already been noted by Ehlers* and by

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* Ehlers (two cases), 'Hospitalslidende' (Copenhagen), May, 1890 (abstract, 'Annales de Dermatologie,' 1891, p. 793).

Hitschmann and Kreibich,* in the lesions of Erythema térébrans, an affection which may be regarded as identical with that known in this country as Dermatitis gangrænosa. By these observers the bacillus was found also in the heart's blood after death, and by Hitschmann and Kreibich in the deeper tissues of the lesion in sections. They, therefore, regarded the cases as examples of pyocyanic infection. This view was supported by Charrin † in regard to Ehlers' cases and two cases with hæmorrhagic bullous eruption reported at about the same time by Neumann. Charrin had already shown that the *bacillus pyocyaneus* was pathogenic for animals, and he pointed out the similarity of the general symptoms in these cases of Ehlers and of Neumann with the symptoms of animal "pyocyanic disease."

The occurrence of human infection by the *bacillus pyocyaneus* has now become a well-recognised fact, although at present text-book literature is very meagre or silent concerning this disease. Cases of pyocyanic infection have been recorded by Oeltinger, Ehlers, Jadkewitch, Neumann, Schaefer, Karlinsky, Ledderhose, Jakowski, Gruber, Martha, Krannhals, Calmette, Monier, Ernst, Kossel, Hitschmann and Kreibich, Fowler, Adami and Williams, Kossel, Blumer, Williams and Cameron, Lavender, Pes and Gradenigo, Le Noir, Blum, Barker, Wollstein, Pernet. Some of these cases were examples of local infections, with more or less general intoxication; many of them were cases of general infection in which the bacillus was found in the blood and viscera, mucous membranes, or serous cavities. The general symptoms were often those of a virulent septicæmia; sometimes there was a condition resembling typhoid fever. The local infections include, as would be expected, widely different lesions according to the severity of the infection and to the organ affected. Various forms of intestinal hæmorrhages and ulcerations are not at all uncommon. Less common are ulcerative and hæmorrhagic lesions of the stomach (Wollstein); hæmorrhagic and necrotic cystitis, and purulent pyelitis; purulent peritonitis, or inflammation of the serous membrane; bronchopneumonia; localised abscesses, *e.g.* in ovary, liver, subcutaneous tissue, tympanic cavity; cutaneous hæmorrhages, vesicles or bullæ, with hæmorrhage; gangrenous lesions.

It is not, however, my intention to here review the literature relative to this disease. Interesting papers upon pyocyanic infection will be found by L. F. Barker, 'Journal American Association,' 1897; by Wollstein, 'Archives of Pediatrics,' October, 1897; and by Lartingau, 'Philadelphia Medical Journal,' September, 1898. A recent paper by G. Pernet, "The *bacillus pyocyaneus* and Pemphigus Vegetans,"* gives several references.

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* Hitschmann and Kreibich (three cases), 'Wien. klin. Wochenschrift,' 1897, No. 50, 'Archiv. für Dermatology,' vol. i, 1897, p. 81.

† Charrin, 'Comptes Rendu de la Société de Biologie,' 9th sér., ii, p. 496, 1891.

In conclusion, it is not unreasonable to suppose that the *bacillus pyocyaneus* may in this case have been the cause of the lesions and of a general toxæmia which led to death. From the fact that it was found in the early lesions I conclude that if it were a causative agent its influence began from the start, and that it was not merely a late secondary infection of an ordinary streptococcic bullous impetigo. I am aware that the case is incomplete; it serves, however, to confirm the observations of Ehlers and of Hitschmann and Kreibich of the finding of *bacillus pyocyaneus* in cases of Dermatitis gangrænosa infantum and also to call attention to the importance of a more thorough bacterial investigation in similar cases.

Editorial.

CHILD LIFE INSURANCE.

A LAW has recently been passed in France which prohibits the insurance of children's lives under twelve years of age, an enactment which could be added with advantage to our Statutes. The present custom amongst the poor of insuring their children's lives is certainly not for the benefit of the insured, and it may in some instances prove a strong temptation to the perpetration of infanticide by callous parents and guardians. An infant can be brought to the verge of starvation, and can be slowly done to death by the administration of improper food not in itself unwholesome, and it is often difficult to decide, in such a case, whether the child's miserable condition is owing to lamentable parental ignorance or is the outcome of criminal intention. Marasmic children, whose miserable state has been brought about by improper feeding, are frequently to be found amongst those who have had their lives insured by the weekly payments of trifling sums of money.

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* 'British Medical Journal,' October the 15th, 1904.

The present custom can be defended only on the grounds that it makes provision for the child's funeral expenses, but such a contingency could be better met by providing for the payment of the charges incurred for the interment by the Insurance Company.

Apart from this aspect of the case there is no necessity for the life insurance of a child. The child has no one dependent upon it, no one loses by its death, and there is no monetary value attached to its life.

The passing of this new French law was the outcome of the cruelties practised on insured children in the northern parts of France.

The Society for the Prevention of Cruelty to Children might well give their attention to this matter in the interests of the infant population and promote a similar Bill in Parliament to that which has recently become the law in France.

Abstracts from Current Literature.

Medicine.

The theory of sudden or gradual weaning (' *Riv. di Clin. Ped.*,' *September*, 1904).—**G. Guidi** contributes a paper on this subject from his experiences at the Children's Hospital at Florence.

After six months of age the child should be accustomed to the administration of farinaceous food, simple broths, milk and yolk of egg, which must not substitute, but aid, the breast feeding, in greater or less proportion according to the quantity and quality of the mother's milk and the appetite and digestive power of the child. In cases of deficiency in the quantity or quality of the mother's milk, from the first month mixed feeding must be established by giving bottles of sterilised or Pasteurised milk, but always contemporaneously with breast feeding, it being proved that even minute doses of mother's milk, when mixed with cow's milk, are sufficient by virtue of special ferments of favouring digestion. After six months, even in mixed suckling, the bottle may be abandoned, accustoming the infant to take food followed by the breast given regularly every three hours. At 13 to 14 months, except in special pathological conditions, the breast feeding must be suddenly suspended, substituting entirely semi-solid food, to which the infant is by this time accustomed. In cases where the mother's milk fails entirely, the infant should not be weaned, but a wet nurse provided, and mixed feeding established if beyond 6 months, the wet nurse taking the mother's place as above indicated. VINCENT DICKINSON.

Hereditary juvenile locomotor ataxia (*'Wein. klin. Rundschau,' August* 28, 1904, *p.* 625).—**R. Kaufmann** records the occurrence of a case of this nature in a boy aged 10 years. The patient was the youngest of three children, of whom the others were alive and well. The mother was a healthy woman who had had no miscarriages. The father suffered from locomotor ataxia; he presented no specific stigmata, and denied having ever had syphilis. The patient had suffered since his sixth year from incontinence of urine, and since his ninth year from gastric crises. He was a thin, delicate child presenting Hutchinson's teeth and distinct thickening of both radial arteries. His mental condition was unimpaired, and there were no disturbances of speech. The pupils reacted sluggishly to convergence, and not at all to light. The optic fundus was normal and the external ocular muscles not affected. The movements of the upper limbs were natural, whilst the gait was slightly ataxic and Romberg's symptom was present. The reflexes of the upper, and the skin reflexes of the lower extremities were normal. Both patellar reflexes were absent. There were no disturbances of sensibility. The possibility of Friedreich's ataxia may be excluded, and the diagnosis rests between locomotor ataxia and a chronic cerebrospinal meningitis of syphilitic origin. In view of the general course of the disease and of absence of all cerebral symptoms, with exception of the pupillary changes, the writer believes that there is not sufficient evidence to justify the assumption of the existence of chronic meningitis, and concludes that the case is most probably one of hereditary juvenile tabes dorsalis. E. P. BAUMANN.

Acute leukæmia in early life (*'Archives of Pediatrics,' vol.* xv, 1898, *p.* 330).—**Morse** reported a case in a girl, aged 4 years, and gave a brief *résumé* of seven cases under 10 years of age, collected from various literature. **McCrae** (*Johns Hopkins Bulletin*, 1900, *vol.* II, *p.* 102) gave abstracts of thirteen cases, including those collected by Morse, and reported one in a boy, aged 3 years. **F. S. Churchill** (*'Amer. Jour. Med. Sci.,' October*, 1904, *p.* 563) records a case in a boy, aged 4 years, and gives abstracts of fourteen other collected cases, reported since the publication of McCrae's paper. Of these fourteen, ten were males and four females; seven were under 2 years of age (possibly two of these were not typical); in twelve death resulted while under observation, and in five autopsies were carefully made. A differential blood count was made in all but one case. The age of the patients, and the reporter, were as follows: 19 days (Pollman), 7 months (Jewitt), 8 months (Bloch and Hirschfeld), 13 months (Jewitt), 13 months (Strauss), 1 year (Glinski), 20 months (McCaw), 4 years (Rocaz), 5 years (Fowler), 5 years (Geissler and Japha), 6 years (Janeway), 6 years (Stewart and Campbell), 9 years (Einhorn), 10 years (Taylor). Churchill's patient was a boy, aged 4 years, who had anorexia and increasing waxy pallor of some months' duration. On examination, the tonsils were large, the red cells 3,500,000, white cells 10,000, hæmoglobin 75 per cent. A fortnight later the white cells were much more numerous. He developed a purpuric eruption, enlarged spleen, fever, melæna, Cheyne-Stokes breathing, and died in a state of unconsciousness. The number of red cells and the percentage of hæmoglobin steadily decreased, except on one day following an injection of 60 c.c. of human blood serum. The leucocytes increased to 80,000, but fell to 6000 two days before death; 98·2 to 99·5 per cent. of them were mononuclear. Streptococci were found in the blood and post mortem, and might account for the fever and fall in the number of leucocytes. Streptococci have been found in other cases. The autopsy showed hyperplasia of the intra-abdominal lymph glands, of the spleen (weight 90 gms.), and intestinal lymph follicles; general anæmia; multiple hæmorrhages of serous membranes, kidneys, myocardium and bone marrow; accessory spleen; liver 565 gms. in weight; some enlargement of the thymus, tracheal and bronchial glands. Microscopically: general infiltration of organs with lymph-adenoid cells, closely resembling the small mononuclear lymphocytes. Bone marrow involved. The affection is more frequent in males, twenty-one out of the total twenty-nine cases. The spleen is invariably, and the liver generally, enlarged. The spleen may diminish in size before death. The cervical glands are the most often involved, general glandular enlargement being by no means constant. The onset is usually insidious. An acute onset generally means the termination of a chronic process. Duration: a few days to five months, not often more than nine weeks; does not depend on the type. Almost invariably lymphocytic, twenty-five cases; myelocytic in one only (Stewart and Campbell); mixed in two and undetermined in one. The small mononuclear cells predominated in twelve out of seventeen, the large in three, and in two the varieties were equal. Polymorphonuclears are always reduced (except, perhaps, in the presence of intercurrent disease). In the lymphocytic type myelocytes are rarely present. The number of white cells varies from 6000 to 800,000. The number of red cells may fall to 750,000 after severe hæmorrhage. Hæmorrhage is less frequent and less severe than in adults. It occurred in seventeen, but was only severe in one of the twenty-nine cases. The actual cause of the blood change is undoubtedly a chemiotactic agent acting on the bone marrow, the type of the disease depending on the nature of this agent. The most recent researches show that the bone marrow is always involved, in all types of the disease, and that the glandular system is sometimes entirely unaffected. Intercurrent disease or infection may affect the blood picture, reducing the total leucocytosis and often increasing the number of polymorphonuclear cells. In conclusion, he points out that the disease is more common than is supposed, twenty-two of the twenty-nine cases having been reported since 1898. He suggests the use of injections of various sera, anti-streptococcic, anti-pneumococcic, etc., in treatment. And he advises experimental research on the effects of inoculations into the bone marrow of leukæmic blood and cultures of pathogenic organisms. **Savory** ('*Lancet*,' 1903, *vol.* II, *p.* 162) reported a case in a child of 4 years who died in seven weeks. No autopsy was obtained. Blood count: 2,175,000 red cells, 356,000 leucocytes. Hæmoglobin 35 per cent. Differential count: large and small mononuclears 96·07, polynuclears 3·45, myelocytes 0·16, eosinophiles 0·33. The large cells greatly predominated, but there was no line of demarcation between large and small ones. **George Carpenter** ('*Reports of The Society for the Study of Disease in Children*,' *vol.* III, *p.* 47) reported a case in a child of 3½ years who had been ill for five weeks, and died a week later. Red corpuscles 1,568,111 per c.mm.: hæmoglobin 15 per cent.; colour index 0·5; white corpuscles 130,111 per c.mm., the ratio being 1 to 12. Differential count of 4000 leucocytes; small lymphocytes (mainly) and large lymphocytes together 3967, equals 99·18 per cent.; polymorphonuclear 19, equals 0·48 per cent.; eosinophiles 5, equals 0·12 per cent.; myelocytes (one eosinophile myelocyte) 9, equals 0·22 per cent. One nucleated red corpuscle was seen while counting 4000 leucocytes. Blood cultures negative; bronchial glands enlarged, unduly prominent Peyer's patches and lymph follicles in the intestines; lymphatic tissue in large intestine in excess; a few small ulcers present in the large and small intestines. Mesenteric glands enlarged, pale and some caseating. Spleen large, weighed 4 ozs. Liver large and pale. Right kidney 5¼th ozs.; left kidney 6¼th ozs. Cortices greatly thickened, which showed on microscopical examination extensive leucocytal infiltration. Pancreas normal. Many small glands were present along the course of the abdominal aorta and iliac vessels, and also in the groins and the axillæ. They were caseating. The thymus was normal. A piece of rib marrow was pale, but apparently normal. A paper on **Acute Lymphatic Leukæmia**, by **Rosenberger** ('*Amer. Jour. Med. Sci.*,' *October*, 1904, *p.* 583), should also be read in connection with this subject.

EDMUND CAUTLEY.

Acute leukæmia: a clinical and pathological study ('*La Presse Médicale*,' *April* 2, 1904, *p.* 209).—**E. Rist** and **L. Ribadeau-Dumas** describe a case of this disease in a boy aged 8 years. Early in October he complained of toothache. Next morning his breath was offensive, his gums and tonsils swollen, and the whole mouth covered with a brownish coating, "as if he had been eating chocolate." A few days after glands were felt in the groin. As the toothache continued and the gums began to bleed, one of the molar teeth was removed, and this caused severe and obstinate hæmorrhage. At the same time ecchymoses appeared all over the body. The boy was admitted into hospital, and it was then found that the spleen was much enlarged. The patient became rapidly worse; hæmorrhages occurred from the nose and the mouth. The various groups of lymphatic glands became successively enlarged, and the spleen rapidly increased in size. Death occurred about a month after the commencement of the illness. No complete autopsy could be made, but an inguinal gland had been excised during life, and the left tonsil was removed a few minutes after death. During life, also, many examinations of the blood were made. The hæmatometer and hæmochromometer of Melassez were used, and the day after admission the blood-count gave: red corpuscles, 862,000; white, 312,000 per c.mm.; or 2·8 red to 1 white. The hæmachromometer showed $\frac{2}{15}$ of the normal amount of hæmoglobin. A qualitative count of the white cells showed: large lymphocytes, 93 per cent.; small lymphocytes, 3 per cent.; neutrophile myelocytes, 0·4 per cent.; eosinophile myelocytes, 0·6 per cent.; polynuclear cells, 2 per cent.; nucleated red cells, 1 per cent. In 100 polynuclear cells counted there were: eosinophiles, 12; mast cells, 7; neutrophile polynuclear cells, 81. The later examinations showed still further increase of the white, until, the day before death, the red cells were only 1·5 to one white. Histologically, the lymphatic gland removed showed the adenoid tissue "transformed into diffuse lymphoma," the greater number of the cells being large lymphocytes. The tonsil also was infiltrated by lymphomatous tissue, and on its deep surface there were many mast-cells. These appearances confirmed the diagnosis of acute lymphatic leucocythæmia. Numerous unsuccessful attempts were made to cultivate an organism from the blood and from the lymphatic gland; and attempts, also unsuccessful, were made to reproduce the disease, in mice, by inoculation of blood and emulsion of a gland, and in monkeys, by subcutaneous grafting of a piece of a lymphatic gland. After reviewing the literature, the authors conclude that nothing is really known as to the pathogeny of the disease. S. H. Bown.

Orthostatic albuminuria ('*Amer. Journ. Med. Science*,' *August*, 1904, *vol* cxxviii, ii, p. 307).—**Charles Louis Mix** reports five cases of this condition and reviews the literature. He divides all such cases into intermittent and continuous groups, but acknowledges that the latter may be converted into the former. Children of the former group are usually cases of post-infectious nephritis. Of the latter groups adults are almost invariably neurasthenic, and the albuminuria may be explained by the vaso-motor paresis that is present as evidenced by the pulsatile aorta. The children of this group have nearly always congenital movable kidney. Of the children females preponderate, especially adolescent girls; in adult life the male sex is much more often affected. The author looks upon posture as being the determining factor in most of the cases—not diet, exercise, cold, or the other usually accredited agents. The pathology is very ably discussed, and the opinion expressed that in time the symptom will be looked upon as indicating one of several conditions, five of which are clearly indicated.

A. Ernest Jones.

Respiratory form of encephalo-meningeal reactions in course of intestinal infection ('*Rev. Mens. des Malad. de l'Enf.*,' *November*, 1904, *vol.* xxii, *p.* 481).—**P. Nobecourt** discusses the meningeal symptoms that so frequently occur in the course of infantile diarrhœa. He points out that cases occur in which these symptoms may not be the usual ones of head retraction, convulsions, Kernig's sign or strabismus, but may consist chiefly in variations of the respiratory rhythm. These variations often occur but are not remarked. He records two cases in which they were the most prominent of the irritative phenomena. The alteration of rhythm simulated precisely Cheyne-Stokes respiration in one case, and consisted mainly in irregularity of extent, *i.e.* inequality in the other. It may be objected that as the first case had acute broncho-pneumonia at the time, this might account for the symptom. The pathological side is discussed, and the hypothesis put forward that toxin substances absorbed from the alimentary tract irritate the nerve centres. Meningitis is excluded merely on the evidence obtained by lumbar puncture, as the second case recovered, and the second had no autopsy performed. A. Ernest Jones.

An unusual variety of pleurisy in children ('*The Practitioner*,' *September*, 1904, *p.* 381).—Under this title **Clive Riviere** describes a form of pleurisy where a loculated effusion occurs over the middle lobe of the right lung. From its situation it may be confused with cardiac enlargement, empyema, and collapse or bronchiectasis of the middle lobe, and the differential diagnosis is discussed. Six cases are narrated in which friction sounds were sometimes heard, and in which effusion was supposed to have occurred. As the author remarks, it is to be regretted that the presence of fluid was never definitely ascertained by means of an exploring needle. As regards the pathology, it is suggested that the starting-point may have been a tuberculous focus, since the root of this lobe is a common situation for sub-pleural caseous glands in children. G. A. Sutherland.

Pathology.

The transmissibility of micro-organisms from the mother to the fœtus through the placenta (‘*La Pediatria*,’ *March* and *October*, 1904).—**Jovane** and **Chiarolanza** proposed to investigate whether the causes that determine the passage of micro-organisms through the placenta vary with each infection, and, if so, in what measure, and by what mechanism they act. They admit as established the fact that there are cases in which germs circulating in the maternal blood infect the fœtus. They explain the contradictory conclusions arrived at by different authors on the transmissibility of various infections, and refer to the results obtained by them in investigations on the rabbit and guinea-pig with B. coli and pneumococci. They soon arrived at conclusions, admitting that the placenta was endowed with special activity which modified the substance which passed through from mother to fœtus, and that there occurs a modification of the biological properties of the placenta by the passage of microbes, and that the presence in the fœtus of micro-organisms that infect the mother only occurs in very grave infections. In the later number the authors arrive at the following conclusions: (1) In the rabbit the passage of B. coli, pneumococcus, streptococcus and staphylococcus pyogenes aureus into the fœtus through the placenta may be effected by inoculating directly into the venous current a very large dose of virulent broth culture. (2) By inoculating, in the same way, doses of broth culture, small, but always larger than the minimum fatal dose, the passage of these bacteria into the fœtus is not obtained. (3) If the site chosen for inoculation be the subcutaneous connective tissue, whatever be the quantity of virulent broth culture used, the passage of these bacteria does not take place. (4) The reason of these experimental results is to be found in the fact that when massive doses of virulent broth culture are inoculated directly into the blood-stream, the period of incubation of each kind of bacterium is rendered very short, so that their rapid and intense multiplication a short time after their introduction destroys all power of defence. Thus the conditions necessary for the passage are arrived at by the production of hæmorrhagic infarcts. When, on the other hand, small doses of broth culture are inoculated directly into the blood, or the connective tissue is chosen as mode of entrance, there is a longer period of incubation, the bacteria collect and develop in the lymphatic glands, spleen and bone marrow, only to pass into the blood at the moment of death or soon after. This multiplication of bacteria in the blood under such conditions, when the circulation is very slow or altogether suspended, is not sufficient to overcome the placental barrier, so that the bacteria are not transmitted to the fœtus. (5) The fact that in the same animal subjected to an experimental inoculation the bacteria pass into some fœti and not into others proves that the rapid and intense multiplication of bacteria in the blood is a necessary, but not sufficient, condition. Local alterations of the placenta are also required, and the passage only happens in those which present these alterations. (6) Whether the passage happens, or not, bacteria are always found in the placenta whenever the animal dies of septicæmia. This difference, however, exists, that when the microbes pass into the fœtus they are located also in the fœtal region of the placenta, while in the opposite event they occupy the maternal part only of this organ. (7) In cases where transmission has taken place there are especially noticed extensive plugs of bacteria occluding the lumen of the vessels, and at some points bacteria are seen extruding through the ruptured walls into the surrounding tissue. VINCENT DICKINSON.

Nephritis in hereditary syphilis ('*Berl. klin. Woch.*,' 1904, *No.* 21). —**Cassel** has studied the kidney changes in a number of cases of congenital syphilis. In the first place he carefully examined the urine of thirty-one children, the subjects of hereditary syphilis. In only six cases was he able to demonstrate the presence of albumin and formed elements in the urine, and in only three of these could syphilis be definitely regarded as the etiological factor causing the urinary changes. He next directed his attention to the post-mortem appearances of the kidneys of such children. For this purpose he examined the kidneys of seven syphilitic fœtuses, and of five cases where the subjects had survived for some weeks or months. Microscopically, he found no evidence of syphilis in eleven cases. In the twelfth, where a condition of pyelonephritis coexisted, hard masses of the size of a pea were seen in the cortex. On histological examination, with the exception of two fœtuses, he found in all his cases certain parenchymatous changes. The changes were present in various degrees of severity, ranging from fatty degeneration of the lining cells of a few urine tubules to complete degeneration of the tubules and glomeruli. In the five cases who had survived for some time cystic degeneration of the glomeruli was a constant feature, and in one there was in addition cystic dilatation of the tubules. These changes are probably in part due to the interstitial changes producing compression of the tubules; but this is not always the case, for in two instances cysts were present when the interstitial changes were quite unimportant. This cystic degeneration is not characteristic of syphilis. It is probably secondary either to the action of the syphilitic virus, as is believed by George Carpenter, or to some mixed infection or other toxic process. Definite interstitial changes were present in all the cases which had survived for some time after birth. The changes varied from the occurrence of occasional groups of small-cell infiltration in the outer layers of the cortex to the presence of numerous large groups scattered through the cortex. In every case the infiltration was accompanied by definite proliferation of the adventitia of the interlobular arteries from which are given off the vasa afferentia to the malpighian bodies. In the periadventitial cell masses there were recognised lymphocytes, polynuclear, mononuclear, and eosinophile, and plasma cells. The process had in no case proceeded to the length of the formation of connective tissue. Of the seven specimens taken from syphilitic fœtuses, six showed inflammatory interstitial cellular proliferation of stages of growth. Here, too, the periadventitial infiltration was a constant feature, although the cells were of a more homogeneous type. In the kidneys from fifteen normal control cases the writer never found the least trace of interstitial or periadventitial infiltration. The interstitial changes present no features by which they may be distinguished from any other inflammatory process, but the periadventitial changes have been said to be pathognomonic and are of strong diagnostic import. Like Strœba and Hecker, Cassel found that the kidneys of syphilitic fœtuses present curious evidences of retarded development as shown by a deficiency in the number of glomeruli and urinary tubules; the kidneys present generally an embryonic character which distinguishes them from the kidneys of normal fœtuses of the same age. The general conclusions are as follows: (1) Syphilitic nephritis is seldom clinically recognisable; (2) microscopic examination of the kidneys yields positive results only in exceptional cases; (3) histological examination reveals in the majority of cases the presence of pathological changes. In the cases which have survived for some time after birth the chief alterations consist in interstitial and periadventitial cellular infiltration, and in cystic degeneration of the glomeruli. In syphilitic fœtuses there is found in addition evidence of retarded development of the kidneys. E. P. Baumann.

Experimental arthritis and endocarditis produced by a streptococcus from a case of rheumatism (*'Amer. Jour. Med. Sci.,' October*, 1904, *p.* 601).—**M. J. Lewis** and **W. T. Longcope** isolated a streptococcus from a case of severe chorea, following an attack of rheumatic fever. During the chorea hyperpyrexia and a systolic apical murmur developed and increased in intensity until death on the second day of the hyperpyrexia. The blood cultures were made on the day of death. No autopsy was allowed. The streptococcus, inoculated intravenously into rabbits, was moderately virulent, and gave rise with great constancy to a multiple arthritis, which was fatal in one case complicated by vegetative endocarditis. The joint symptoms came on after four to nine days. The organism was recovered from the affected joints. It could not be distinguished, morphologically and biologically, from the usual varieties of streptococcus pyogenes. Glaser has observed multiple arthritis in rabbits following intravenous injections of various strains of streptococci. Under ordinary circumstances a fatal septicæmia is produced, but with attenuated cultures a monoarthritis or polyarthritis may follow. The writers regard the organism in their case as the same as that described by Wassermann, Meyer, Poynton and Paine, and Walker. Edmund Cautley.

Purulent pericarditis in infancy (*'Amer. Journ. Med. Science,' Aug.*, 1904, *vol.* cxxviii, ii, *p.* 248).—**D. J. M. Miller** and **J. C. Gittings** give a short summary of this subject, based on 364 autopsies at Philadelphia. The condition was found in 2·2 per cent. of these autopsies, contrasting with the higher figures of Still (3·6 per cent.), and Batten (3 per cent.), which, however, referred to twice the number of cases. The authors found pneumonia or pleurisy in only 50 per cent. of the cases, while Still recorded empyema in twenty-two of twenty-three cases under three years of age. There is no doubt that the frequency of purulent pericarditis varies inversely with the age, except for a slight gap between the second and sixth months of life. The pneumococcus is the commonest infection, indeed, according to Still, almost the only one. Baginsky and others have, however, reported cases showing infection of Friedlander's Bacillus coli, Bacillus pyocyaneus, besides the commoner pyogenic organisms. The authors describe carefully a case, aged 4½ months, with primary pleurogenic proliferative, interstitial pneumonia, following ileocolitis and succeeded by a purulent pericarditis; in the fluid of the latter a mixed infection was present. A. Ernest Jones.

Agglutination of scarlatinal Streptococci (*Boc. de Biol., May* 14, 1904).—**Dopter's** conclusions are these: Such streptococci are usually clumped by a 1 in 20 to 1 in 100 serum obtained from the same patient, at 1 in 80 to 1 in 100 only by sera obtained from foreign patients; this serum has precisely the same action on streptococci obtained from an abscess or from erysipelas. Conversely serum obtained from a patient with angina due to erysipelatous streptococci will often clump scarlatinal streptococci, even though the patient has never had scarlet fever. The author, therefore, considers that these scarlatinal streptococci are purely secondary infections.

A. Ernest Jones.

Therapeutics.

Meningeal permeability in children (*'Journal de Médecine de Bordeaux,' December* 18, 1904). **Cruchet**. Twenty-eight cases of meningitis, eight of them tuberculous, showed no iodide of potash in the fluid obtained by lumbar puncture, after the drug had been administered by the mouth for four or five days and had appeared in the urine. Therefore the absence of the drug from spinal fluid does not disprove the existence of tuberculous meningitis.
T. P. BEDDOES.

Treatment of paralysis in children (*'Lancet,' January* 7, 1905). **Mumford** advocates a special series of exercises which are based upon a study of the natural order in which the normal child acquires control of the muscles used in walking and in standing. The first part of the treatment consists in passive flexion and extension of the affected legs. After a time come slow external rotation and circumduction of the thighs. In addition, massage of all the muscles is carried out. These exercises are performed for a few minutes at least twelve or fourteen times a day. The child's attention is thus constantly directed to these movements so as to permanently fix them on his memory. Presently an attempt is made by the child, while lying on his back, to make these movements voluntarily. In spastic cases this can be done without spasm occurring; but when the child is placed in the upright position, with his legs hanging down, the spasm returns on any attempt at exertion. The next stage is an attempt to initiate the four-footed mode of progression. The child is laid on his face, a bar fixed to a chain is placed in his hands, and he is then encouraged to pull himself forwards. By lying in this position the hips are extended as well as abducted to a certain extent. Voluntary movement in this position produces a certain amount of external rotation and a separation of the thighs. By-and-by the legs participate in the forward movement, though at first they hardly seem to do so at all. Soon the child can be made to voluntarily abduct and circumduct the thighs, and also to flex the legs alternately. When this stage has been reached, the patient may be encouraged to put his feet on the floor, the body being at first supported. Attention must now be given to the movements of the shoulders and arms. Parallel bars are so arranged that when the child is held upright he can just grasp the bars, while his feet touch the ground. He then learns to hold himself from the shoulder. So far, the power of grasp in the hands and the power of holding the arms and shoulders rigid has not been attained by means of these exercises, which are a source of great pleasure to the child, who increases in weight, in vigour, and in mental alertness while they are being carried out.
JAMES BURNET (Edinburgh).

Relations of proteids to œdema in marantic children (*'Pediatrics,'* 1904, *vol.* XVI, *p.* 129).—**P. A. Potter** regards œdema in marantic children during an attack of diarrhœa as not necessarily a sign of approaching death. Five out of six cases, aged 3 to 10 months, which he reports, recovered. The condition has been assigned to hydræmia of the blood (L. Emmet Holt); to infection (R. G. Freeman); to the effect of constitutional depression on the sympathetic nervous system (C. A. Herter); to renal infection (Wolf: 'Archiv of Pediatrics,' Dec., 1902). The pathological evidence is opposed to renal disease as a cause. Potter states that the œdema can be cured by increasing the percentage of proteid in the milk; that acute unprotracted diarrhœa is not accompanied by renal mischief; that alcohol is not injurious in the treatment; and that œdema is a bad sign but not necessarily a fatal one. He recommends that the diarrhœa may be disregarded, and that the treatment must be chiefly directed to increasing the amount of proteid in the diet. EDMUND CAUTLEY.

Hereditary syphilis ('*Medical News*,' *August* 13*th*, 1904).—**Howard S. Kinne,** of Newberry, Pa., in a paper on this subject, discusses the prophylaxis, the question of nutrition, and the manner of administering treatment. He advocates the methods of treatment usually adopted in this country.

P. LOCKHART MUMMERY.

Suggestion as a means of treatment and training in cases of vicious habits of childhood ('*Le Progrès Médical*,' *August* 20, 1904).—**Bérillon** states that vicious and immoral impulses in children can be eradicated by hypnotic methods. In the normal child the ordinary methods of training create sufficient will-power. In the abnormal, however, these are inefficient. The author considers that hypnotic suggestion is of enormous value in such cases in the systematic training and production of will-power. He states that wayward and intractable children become immediately educable and subject to formative influences from the time they are treated by suggestion. Irresistible impulses, he says, have their origin in unstable conditions of the nervous system; in natural sleep, and, still more, in induced sleep, the equilibrium of the nervous functions tends to be re-established. This he finds the *rationale* of the curative action of hypnotism. Among vicious habits in which he has found hypnotism of inestimable value are kleptomania, onanism, sexual perversions, nail-biting, lying, tendencies to wandering, and incontinence of urine. These methods, of course, are not adaptable to cases of pronounced mental defect. The improvement is permanent in suitable cases, and the method is absolutely without risk.

C. J. THOMAS.

Surgery.

Two cases of intussusception in infants ('*The Scottish Med. and Surg. Journal*,' *October*, 1904, *p.* 292).—**George L. Chiene** describes two cases of this affection on which he successfully operated. The first patient was an infant aged 6 weeks, who was operated on thirty-two hours after the onset. After laparotomy, the greater part of the invaginated bowel was easily reduced, but the terminal portion was so congested that it was not until the swollen part had been diminished in size by steady pressure for some time that reduction could be effected. The second patient was a child aged 2 years, who had been operated on for a similar attack a year and nine months previously. Laparotomy was again performed, ten hours after the onset, and the bowel easily reduced. G. A. SUTHERLAND.

Excision of the joint for hip disease ('*Bristol Medico-Chirurg. Journ.*,' *September*, 1904).—**Charles A. Morton,** of Bristol, in an article upon this subject, gives his experiences of twenty-four cases and discusses the value of the operation. He regards the indication for excision to be the presence of suppuration in and outside the joint. He does not advocate excision in the early stages of hip disease before there are signs of suppuration. He prefers the anterior incision for the operation and advises excision in all cases in contra-distinction to erasion. He advocates drainage in all cases where proper antiseptic precautions can be insured during the dressings. Perforation of the acetabulum was only present in two out of twenty-six cases, and Morton does not believe this complication to be as common as is usually stated. With regard to the primary point of origin of the disease Morton is inclined to think that surface erasion is the most common condition. He lays stress upon the fact that extensive erasion of the articular cartilage may be present and yet no grating can be detected on moving the joint even under an anaesthetic. P. Lockhart Mummery.

Rupture of a congenital umbilical hernia with double intussusception of the ileum into a Meckel's diverticulum ('*The Lancet*,' *November 12th*, 1904). **E. G. A. Morshead** had the case under his care at the Royal Surrey County Hospital. A protrusion at the umbilicus had been present from birth. At the age of 12 weeks symptoms of strangulation occurred and the intestine was seen to project as two sausage-shaped masses at the umbilicus, the mucous membrane being external. An operation was performed. The invaginated intestine measured ten inches, three inches being an intussusception from the intestine above the Meckel's diverticulum and seven inches being from that below it. Both portions of intestine had come out through the patent Meckel's diverticulum. A similar case, which was under the care of Vincent Jackson, is reported from the Wolverhampton General Hospital, the patient in this case being a male infant aged 10 weeks. These two cases are reported by Parker and Southall. P. Lockhart Mummery.

The treatment of hydrocephalus ('*Med. News*,' *September* 17, 1904: '*Ann. Med.*,' *August* 6, 1904).—**H. Löwenburg** reports a case treated by lumbar puncture. The child was twenty months old; 50—60 c.c. of cerebro-spinal fluid were withdrawn once a week by lumbar puncture for a period of two months. The child improved, but finally died from pneumonia following measles. The author considers lumbar puncture preferable to tapping the ventricles, as there is less danger of complications. He believes lumbar puncture should be used before the second year if it is to be of any benefit.
P. Lockhart Mummery.

Cure of chronic nephritis by renal decapsulation ('*Archives of Pediatrics*,' *October*, 1904).—**Augustus Caillé**, New York.—The patient was a girl, aged 7 years. At the age of 2 she contracted measles, and two weeks later was badly scalded, soon after which she developed swelling and puffiness of the face, and later ascites. For two and a half years after this the child was constantly under treatment for chronic Bright's disease; albumin casts, etc., were constantly present in the urine, and attacks of general œdema and uræmia were frequent. At the age of 4½ years she was operated upon and double decapsulation performed. At the operation the condition of the kidneys was found to be that of chronic parenchymatous nephritis. After the operation the health entirely recovered, œdema disappeared, and there were no more uræmic attacks. The albumin gradually disappeared from the urine, and two years later only the faintest trace could be detected. During the two years following operation the child attended school and remained in perfect health. Renal decapsulation is indicated in cases where chronic nephritis shows no signs of improvement within six to eight months. P. Lockhart Mummery.

Congenital stenosis of lower end of œsophagus ('*Lancet,*' *January* 7, 1905).—**Whipham and Fagge.**—The patient was a girl, aged 4½ years. She had vomited after food practically all her life, with occasional intervals of one or two days. Food was rejected within a very short time of its ingestion. She was much emaciated, her weight being 15¾ lbs.; abdomen flat, with fæcal masses in descending colon; but beyond this nothing abnormal could be made out either in abdomen or chest. She ate and drank readily and swallowed without difficulty, but generally after taking three or four mouthfuls she would stop, as she felt sick. After a few seconds the ingesta were returned undiluted and without acid reaction. A provisional diagnosis of œsophageal pouch was made; but examination by means of bougies and the X rays led to a modification of this diagnosis. The passage of a moderate-sized bougie was arrested at the lower end of the œsophagus, while a No. 2 or 3 catheter passed readily into the stomach; and this, together with the facts that the vomiting came on immediately after meals, that there was no dysphagia nor any swelling of the neck such as is seen in the case of congenital œsophageal pouches, led to a diagnosis being made of congenital stenosis of the lower end of the œsophagus. An attempt was now made to stretch the stricture by means of a series of specially constructed catheters. These were made of gum-elastic with centrally placed round terminal openings into which fitted the bulbous end of a fine wire. This was passed through the catheter and was of such a length as to pass well beyond its upper end. This enabled the smaller catheter to be withdrawn, leaving the stylet *in situ*, over which a larger catheter could then be passed through the stricture. Under an anæsthetic catheters up to a No. 11 were introduced in turn through the stricture. On recovering consciousness emphysema of the neck was observed, first on the right and eventually on the left side. The thoracic and abdominal walls then became emphysematous, and she eventually died, three days after the operation. At the necropsy the stricture was found to be of a fibrous nature, and terminated 1⅓ inch above the cardiac end of the stomach. A small perforation was found leading into the loose cellular tissue around, and from the perforation a large septic track led down into the mediastinum. There was also a pyopneumothorax present. The perforation was no doubt due to the bare bulbous end of the wire stylet. There was no other abnormality present beyond the œsophageal condition. James Burnet (Edinburgh).

Treatment of chronic internal hydrocephalus by auto-drainage ('*Amer. Journ. Med. Science,*' *Aug.* 1904, *vol.* cxxviii, ii, *p.* 255).—**A. S. Taylor** discusses, not the rapidly fatal cases born with hydrocephalus, but the cases, sometimes called congenital and sometimes acquired, in which post mortem a chronic ependymitis in the lateral ventricles, with occlusion of one or more apertures of Monro, Sylvius, Majendi or Retzius, is the only finding apart from the hydrocephalus. The more active the secretion, the greater the pressure, and so the greater the interference with the outflow of the fluid. It is this vicious circle that the surgeon aims at breaking. The earlier operations of repeated puncture, either of the spinal canal or of the ventricles, with or without subsequent injection of iodine, have been largely discarded owing to the undue tendency to die observed in patients thus treated. Permanent drainage of the ventricular fluid into sterile dressings was also apt to be a temporary process, owing to early injection. The occurrence of pyrexia with convulsions was observed to ensue whenever the escape of fluid was too free. Leonard Hill in 1896 next demonstrated that any increase of intra-cranial pressure drove the cerebrospinal fluid into the veins and out of the skull, and that fluid thrown into the subdural and subarchnoid spaces was rapidly absorbed. Sutherland, in 1898, suggested that subdural drainage be undertaken, an operation which Watson Cheyne shortly after carried out in two instances with no benefit as a result. Mikulicz obtained more benefit from connecting the interventricular and subdural spaces by a glass-wool drain than by connecting the interventricular and subcutaneous spaces by a gold tube. Brewer performed the former operation with some success, using a rubber tube. Senn modified the subcutaneous operation by first making a temporal pocket for lymph drainage. Nearly all the cases operated on have died within a short time, and died the sooner the more perfect the drainage established. One must conclude, therefore, that a successful method of drainage must be internal, must be slow, and must be prolonged and permanent. Taylor describes six cases in which he has done a modified subdural operation. The steps and details are explained and justified. Three of the cases died within a week; one died accidentally in two months' time, the other two are still living, eleven and twenty months respectively from the time of operation. The pressure in these two cases is not plus, and a marked benefit has resulted otherwise. Great stress is laid on the importance of early operation before irreparable damage has been done to the brain, and on the necessity of dealing as tenderly as possible with the brain so as to avoid shock. A. ERNEST JONES.

Osteomyelitis of the neck of the femur (*'Journ. de Med. de Bordeaux, November* 13, 1904).—**Villar.**—A girl, aged 13 years, was seen in July, 1902, with raised temperature, vomiting, diarrhœa, and nocturnal delirium. The hip was swollen, the skin over it red, pain on moving the joint, and tenderness, most marked in Scarpa's triangle, where fluctuation was felt. On incision no pus was found in the joint till it was flexed. The head of the bone was resected. Diarrhœa and albuminuria lasted one month. In October the bone was scraped—also in February, 1903. Ankylosis lasted eight months, then the adhesions in the new joint were broken down. For six months a jointed splint was worn, and the movements were of a normal range, allowing the child to be about all day. Radiography showed the trochanter thickened. The neck was in contact with ilium above the articular surface; grating was heard on movement, which did not cause pain. A boot 2½ inches high removed the compensatory curvature of the spine. The point of necrosis was in front of the neck and above the line of excision; the epiphyseal cartilage appeared normal. Though the trouble appeared to be outside the joint, an anterior incision was not recommended. The post-operative treatment was long, but suitable apparatus, regular massage, sulphur treatment by baths and douches, resulted in a perfect joint. T. P. BEDDOES.

Otology, Laryngology and Rhinology.

Ethmoido-sphenoidal empyema in a child aged 12 years; evacuation of the ethmoidal labyrinth, with curettage of the sphenoidal sinus by way of the orbit (*'Archives Internat. de Laryngologie, d'Otologie, et de Rhinologie,' July—August,* 1904).—**Escat.** On September 1st, 1903, he was called to give his opinion on a boy aged 12 years, who was said to be troubled with purulent ethmoiditis, complicated by orbito-ocular symptoms sufficiently serious to demand operative interference. The child had first suffered, two months previously, with a bad sore throat, attended by a high temperature, violent headache, and intense dysphagia. Three days later a muco-purulent rhinitis was established. At the same time a constitutional disturbance appeared, showing the characteristics of an exanthem. During the few following days an acute otitis media was noticed, and next œdema of the left superior eyelid. This œdema increased, and was followed by a state of exophthalmos, combined with an amblyopia, which was accentuated to such an extent that the light of a candle was not perceptible. All these symptoms disappeared gradually, with the exception of a brawny and painful swelling at the inner and upper angle of the eye. On examination there was slight exophthalmos of the left eye, the swelling at the angle of the orbit, as before described, with sufficient evidence of a connection with a focus in the ethmoid. There was very advanced atrophy of the optic disc. Anterior rhinoscopy showed swelling and inflammation of the pituitary body, granulations in the middle meatus, pus in the middle meatus, in the olfactory slit, and on the anterior surface of the sphenoid. Posterior rhinoscopy showed streaks of pus on the naso-pharyngeal surface, on the vault, and above the posterior choanæ. The child was operated upon in the manner alluded to in the heading, the middle turbinated bone being previously removed to facilitate the evacuation of the sphenoidal labyrinth and a minute investigation of the state of the sphenoidal sinus. When this had been done, the bone of the sphenoidal labyrinth was found denuded and mobile in many places. An incision was made through the eyebrow, limited anteriorly by the internal wall of the orbit. The internal wall of the orbit was rough for a space of 3 or 4 millimetres. The lachrymal sac was freed, the muscle of Horner divided, and the other parts of the orbit were gently pushed to the left by the finger until sufficient room was obtained. In the course of this procedure the finger entered into a suppurating focus between the os unguis and os planum. The ethmoid was gradually cleared of all disease by carefully working backwards after the manner of Killian. After this was done, the sphenoidal sinus was exposed, and its anterior surface was seen to be covered with pus, and on removal of the anterior wall it was discovered to be full of granulation tissue and pus. The cavities were cleared out with chloride of zinc after the insufflation of europhen, and the skin wound was closed by sutures. The subsequent treatment consisted chiefly in the internal application of aristol in vaseline, together with, later on, a nasal douche. The patient did extremely well, but the optic atrophy remained unaltered. The nasal secretion diminished rapidly, and in three months cicatrisation was complete, with a total absence of suppuration.

RICHARD LAKE.

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"GONE OFF HIS LEGS."

A CLINICAL LECTURE.

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IT is sometimes advisable to study disease from the point of view of certain symptoms. You will find in practice that the laity lay great stress on certain symptoms, and when these appear medical advice is at once sought. Other symptoms may be of much greater importance and urgency, but they do not appeal to the instincts of mothers in this country, who trust to the healing powers of Nature and only resort to the doctor when matters become desperate. Now one of the symptoms which at once attracts attention is the development of weakness of the lower extremities in a child who has been formerly able to stand, walk, and run about in a natural manner. We may describe it as a weakness in walking and standing, a staggering gait, a limp, a dragging of one leg, or an inability to stand and walk; but one and all of these conditions is summed up more tersely in the statement of the mother that the child has "gone off his legs." This is the great fact that is laid before you, and this is the condition you are to be paid—more or less liberally—for curing. When confronted with a leading symptom which may be associated with various diseases, it is advisable to have an intimate knowledge of the commoner of these diseases, and at least a nodding acquaintance with the rarer. Some of these I propose to discuss with you to-day.

This boy is now two years old, and has always been healthy. He was fed on the breast until he was three months old, and then from a failure of that supply, artificial feeding with tinned milk was begun, and has continued ever since. He has had in addition a progressive diet of prepared barley, Robb's biscuits, beef-tea, potatoes and gravy, and bread and butter, until finally six months ago he was promoted to a seat at the family table, not for snacks only but for the ordinary meals of the family. Having attained to this dignity, he quickly left behind all childish things, and with them the tinned milk, for which, in fact, he had never shown any great partiality. All went well in the family circle until a month ago, when the patient, who had hitherto been on his legs all day, was noticed to be lying about more than usual, and when out of doors expressed a desire to be carried rather than use his own legs. Finally he declined to walk at all, and for the past week he has cried whenever an effort was made to put him on his feet. At a recent family council it was unanimously agreed that he had "gone off his legs," a provisional diagnosis of paralysis was made, and a visit to the hospital was decided on. Now I wish you particularly to note that there was no history of ill health during infancy, and that until a month ago there was no suspicion in the minds of the parents that there was anything wrong with this child. He has always been fat, and in the eyes of most mothers this condition in infants is associated with all that is beautiful and healthy.

On objective examination, we do not at first detect anything apparently abnormal. The boy is fat, but when lying down he can move all his limbs freely. He has no pain when he moves the limbs, but when we place him on his feet he objects strongly, while at the same time we discover that he can both stand and walk. There is, therefore, no complete paralysis here. As regards the nervous system, we can find no trace of any lesion : no localised wasting, no hyperæsthesia, and no altered reflexes. The intelligence is good. As regards the spine there is a slight posterior prominence in the dorso-lumbar region, but this is present only in the sitting posture. When we suspend him by the arms the curve entirely disappears, and we can hyperextend the spine so as to replace the projecting curvature by a hollow. There can, therefore, be no spinal caries here. The muscles of the lower limbs are well developed as regards bulk, but are extremely soft and flabby. There is a loss of tonicity about them, a flabbiness which is very different from the condition present in a healthy infant. In the latter, as soon as you grasp a foot, the limb muscles start up tense in defence, but here you can shake the limb about as if the muscles were really paralysed. The bones of the tibiæ show some thickening at the lower epiphyses, and the ankle, knee, and hip-joints are more flaccid than usual.

Here, then, is our clinical picture. The boy will not stand or walk, and we find him to be fat, flabby, and feeble. As regards his dietary, we have a prolonged course of tinned milk, and lately very little milk at all. We are now in a position to substitute for the generic term "gone off his legs," the more specific diagnosis of "rhachitic pseudo-paralysis."

Why has the boy "gone off his legs"? You will often be told by the mother in such cases that the patient is very tender about the limbs when he is being washed, and you will find tenderness of the limbs described in the text-books as a feature of such cases. I believe this to be a mistake. If the child is roughly handled he will, in his enfeebled state, suffer more than if he were in a robust state of health. And as you watch the wild struggle that goes on in this room often as the mother endeavours to strip a child by taking off the garments in a way they were never designed for, it is quite easy to understand that the same rough handling of the weak limbs at home will elicit cries of pain and symptoms of tenderness. But from observation of these cases in the wards, I have failed to detect in a case of pure rickets any evidence that tenderness of the bones or muscles is a feature of this disease. Further, if such tenderness be definitely present in a case of rickets, it is probably due to some other cause, and the most common cause is extravasation of blood under the periosteum of a long bone, due to scurvy. It is not tenderness or pain, then, which is the cause of the boy's going off his legs. There are two factors at work in producing this condition. The first is the weakness of the muscles and the softening of the long bones in the lower extremity, and the second is the weight of the body which is superimposed on these limbs in the act of standing or walking. The pedestal is too weak for the superstructure. Of course, the disease is not confined to the limbs, for you saw that the back was also yielding from the weight of the head, proving too great for the spinal muscles. The muscles of the upper extremity are also flabby, but are not subjected to any similar strain. Rickets is a disease affecting the whole system, and many other signs may be present in these cases, but what I wish to emphasise is that the stress of the disease may fall on certain structures, and that neither in the history of the case nor on objective examination can you obtain evidence of acute disturbance elsewhere.

The treatment is easy, and in most cases completely successful, although the process of recovery may be slow. The child should be kept lying down in bed or on a couch, so as to prevent deformity of the bones coming on. Splints must be applied if the child cannot be carefully attended to by a nurse. After the stomach and bowels are in a healthy condition a full diet of fresh milk, cream, fish, vegetables, puddings, and bread and butter should be ordered. The essentials are first milk, of which half a pint should be taken four times a day at meals, secondly butter freely, and thirdly cream. The other foods are of secondary consideration, and all the farinaceous foods must be strictly limited in quantity, for his illness is due to a surplus of these in the diet. Cod-liver oil, fresh air and sunlight in the house and out of it, salt baths, and massage to the trunk and limbs are also important in the treatment of such cases.

Another disease of very great importance may be brought under your notice from the fact that the patient has "gone off his legs." I refer to diphtheritic paralysis. Watch the patient as he walks. He is particularly unsteady on his legs, walks with feet separated to give him a broad base, and occasionally staggers from side to side like a drunken person. The history is that this condition has been present for about ten days, and has been getting worse. On inquiring into the history of the previous health you will usually learn that some weeks previously (1) he had an attack of diphtheria, or (2) he had a slight sore throat, or (3) "the glands of his neck came down," and after a few days retired again, or (4) he had a nasal discharge of matter and blood, but not infrequently there is no history of any preceding illness. Any hint of an acute affection of the throat, nose, or neck is of great importance in suggesting the cause of the staggering gait. As regards the patient himself, you will often obtain direct evidence from the presence of two symptoms—a nasal tone of the voice and a squint; and if these happen to attract your notice, as they should do, you can make your diagnosis at once, and proceed to confirm it by further examination. The squint is most frequently due to paralysis of the external rectus muscle, on one or both sides, but may be due to the involvement of other muscles. The nasal tone of voice is of course due to paralysis of the soft palate, which is also manifested by regurgitation of fluids through the nose. The pharyngeal muscles may be paralysed, leading to a difficulty in swallowing. The vocal cords may be affected, and from weakness of the adductor muscles, the voice becomes husky and the cough toneless—like that of a cow—and sometimes described as the "cow-cough." As regards the lower limbs themselves you will find that the ataxic weakness is accompanied by flabbiness of the muscles, by impaired co-ordination, and by loss of the knee-jerks, but not as a rule by rapid wasting, or marked sensory disturbance. Further, this muscular weakness is not confined to the lower limbs, but is general over the whole body, and is frequently accompanied by great mental lethargy, so that these sufferers make most excellent patients. I remember well the first case of this nature which came under my notice when I was a house-physician, and when diphtheritic paralysis was not so well recognised as it is now. The child was admitted for inability to walk, and soon the paralysis became general and only the slightest movements were possible. There was no history of previous illness; the boy never uttered a word, probably from complete paralysis of the vocal cords, but lay quietly and composedly staring at me as I examined him in vain for any diagnostic sign. Finally, the parents removed him, and took also the very gravest prognosis which I could give. A few months later I found him in the out-patient room smiling and talkative and in the best of health. Nevertheless, I wish to impress on you the importance of recognising diphtheritic paraplegia and treating the underlying affection most carefully for the poison which at first shows its effects in certain peripheral, non-vital organs, has a marked tendency to affect the vital nerve centres, and it may be with appalling rapidity. The first part of the treatment is to put the patient to bed and keep him lying in the horizontal position, without pillows, and fastened down with shoulder straps if necessary, until recovery is well advanced. By this means you will at least help to ward off those sudden attacks of cardiac failure or pulmonary dyspnœa which have so often proved fatal in the past. The other parts of treatment we have not time to discuss here. Do not forget diphtheritic paralysis whenever a young patient is brought who has developed recently a difficulty in walking or a staggering gait, and examine for confirmatory evidence in the patient and in the history of his illness.

Take a third illustration. A patient about 3 years old is brought to you because he has been limping, or showing a tendency to fall suddenly, or has entirely "gone off his legs" for a few weeks. As regards antecedent causes, the mother states that the child seemed out of sorts about six weeks previously; he was in bed for a couple of days, languid, drowsy, disinclined for food, and "tender all over." He was not seen by a doctor. Since this attack he has not been able to walk properly, but otherwise no ill-effects have been observed. On examining the lower extremities we find definite evidence of paralysis here, affecting one group of muscles only, or more than one group or groups of muscles in both limbs. It may be that the thigh muscles only are affected (flexor or extensor group), or the anterior tibial muscles, or the posterior tibial group, or the peronei. The muscles affected are cold, flabby, wasted, and on testing the patient's power of using them, you find that they are more or less completely paralysed. If you still remain in doubt as to the diagnosis, you can proceed to use the electrical test, when you will find in the paralysed muscle little response to faradism, and possibly the reaction of degeneration. But in young children electrical testing is extremely difficult. We have without it discovered enough to warrant a diagnosis of infantile paralysis, due to acute anterior poliomyelitis. In this disease, as in diphtheria, you will often find that the sequelæ are striking and serious, while the acute stage is slight in its phenomena and may entirely escape observation. The lesion in infantile paralysis is in the large motor cells of the anterior cornua of the spinal cord, and the resulting lesions of the lower extremities are very characteristic. These are: (1) coldness from impaired circulation in the affected muscles; (2) flabbiness; (3) wasting; (4) paralysis, which, however, may only be observed by a limp in walking; (5) absence of the knee-jerk if the anterior thigh group of muscles is affected.

Another form of loss of walking power is exemplified by the following case, which I met with some months ago. A boy aged 13 years felt very tired after a bicycle ride, and suffered for a few days from malaise, abdominal pains, and prostration. His temperature was slightly raised, so that he was kept in bed for a few days, and appendicitis was suspected. When he got out of bed he complained of great weakness in walking, and could only limp about slowly and stiffly. At the end of a week he went completely "off his legs," and was sent home with the suggestion that serious trouble was present. The boy had previously enjoyed good health, was well-grown and well-developed, but had always been of an extremely nervous temperament, and was now particularly anxious about his own condition. On physical examination nothing was found abnormal about the heart, lungs, or abdomen. The lower extremities were normal in appearance, and no wasting, or tenderness, or articular changes, or alteration in sensation could be detected. When asked to move his legs, he drew them up slowly and to a limited extent, could only lift the extended limb a few inches from the bed, and could only slightly separate the thighs. When one attempted to increase the range of these movements, one could feel that very strong muscular power was used in resisting such movements. The knee-jerks were very active, a slight tap producing a very exaggerated movement, and a condition of pseudo-ankle-clonus was present on the left side. The spine was normal, and there was no bladder or rectal trouble. He raised himself to the sitting posture with difficulty, could not get out of bed without assistance, and required support in walking, a feat which was accomplished with the slowest of movements and the shortest of steps. Now the striking feature about this patient was that we had a very great interference with function with a very small amount of evidence of structural change accompanying it. It was possible, of course, that there was some obscure nervous lesion present, but on the other hand it was unlikely that it would manifest itself solely by this great muscular weakness, limited to the lower extremity, and without other evidence of any central or peripheral lesion. We therefore proceeded to test the lower extremities still further. Passive forcible movements were carried out at the knee and hip-joints, which could soon be flexed and extended to their full extent, by a process of tiring out the opposing muscles. Similarly the adductors of the thighs, which were at first strongly contracted on any attempt at abduction, were soon tired out and full abduction obtained. Following these movements, the patient was encouraged to repeat them voluntarily, which he did to a much greater extent than previously. Another test as to the nature of the paralysis was as follows: Having the patient sitting on the floor in front of me I grasped his wrists, and made him rest his feet against mine. He was then told to pull himself up by his arms. He did so successfully, and one could perceive by the strong action of the lower limbs that this entailed that there was no paralysis present. The further progress of the case was steady and uninterrupted. He was reassured as to the nature of his illness, passive movements were carried out daily, he was encouraged to move his limbs in bed and to walk, a mental stimulus was conveyed by the application of Pacquelin's cautery along the spine, and in a week he was well.

This, then, was a case of functional paralysis, by which we mean that there was a disturbance of function without any ascertainable lesion. But do not be led astray by the common idea that "functional ailment," "hysteria," and "humbug" are synonymous terms. We may confess our own ignorance by the use of the term "functional," but we are not justified in calling the patient a humbug. Personally, I believe that the disability is as real to the sufferer as it would be were his leg broken. The forms which functional paraplegia may take are legion. It may simulate morbus coxæ, or disease of the knee or ankle-joints; it may be associated with pains between the joints; it may follow a fall or strain or other injury; or it may come on after rest in bed for disease in some other part of the body. There is no doubt that it most frequently occurs in children of a nervous temperament and with a nervous family history. Each case must be treated on its own merits, but speaking generally, the important factors in treatment are encouragement to the patient, massage, exercise, and electricity to the affected limb or limbs. Recurrences are not infrequent, and it is very important to remember that in the same patient a functional neurosis may at one time affect the larynx, at another the spine, and at a third a joint.

Finally, you must be on your guard when a child is brought to you because he has "gone off his legs" owing to "rheumatism." This is the most common and the most popular diagnosis in nursery circles; it is made regarding infants of six months when they cease to move the lower limb or limbs actively and seem tender, and in nine cases out of ten it is wrong. Therefore, whenever a child is brought with a diagnosis of rheumatism, from the presence of pain or loss of power in the lower extremities, there is strong presumptive evidence that the disease is not rheumatism. The pains of rheumatism in childhood are as a rule slight and fleeting; they are seldom severe or lasting enough to cripple the patient, unless acute articular changes are also present.

These are the commoner affections with which you will have to deal in the ordinary course of practice, and I shall just enumerate some others which must be borne in mind: (1) cerebral disease, such as cortical sclerosis or cerebellar tumour; (2) cord disease, such as Friedreich's ataxy, or pressure from spinal caries; (3) myopathy, such as pseudo-hypertrophic paralysis; (4) arthritic disease; (5) osteal disease, such as osteo-myelitis; and (6) cutaneous disease, such as erythema nodosum. Each of these diseases has its distinctive features, which will not be overlooked if a careful examination is made.

SUDDEN DEATHS IN CHILDREN.*

By Charles Macalister, M.D.,
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Sudden deaths among children, although, fortunately, of comparatively rare occurrence, are relatively large in number to the total number of sudden deaths at all ages, but the conditions which occasion them are frequently of so mysterious a nature that I am afraid that to whatever facts I may be able to give authoritative expression, it will be necessary for me to add some more or less hypothetical explanations to account for them. It is owing, no doubt, to the obscurity of their nature that a discussion has been invited at this special meeting, and one hopes that the experiences which will be elicited from gentlemen representing workers, both in the clinical and in the pathological departments of medicine, will greatly help to consolidate and bring to a focus our knowledge of the subject.

I may perhaps be permitted at the very outset of my remarks to digress for one moment, and to direct attention to the fact that, in children who are the subjects of organic disease, it sometimes happens, strange as it may appear, that death may be simulated, and I have had two experiences illustrating this fact. One of these occurred during a period of residency in a hospital, when a night-sister came and reported the death of a child, and asked permission to have the body removed to the mortuary. Fortunately, the suddenness of the supposed death so surprised me that I went immediately to inspect the body, and found the child presenting such pallor, with cold and wet brow, eyes partly open, yet breathing so quietly, and the heart's action so feeble after a crisis, that the mistake did not greatly surprise me. But, although this patient recovered, there can be no doubt that children who are improperly nursed and nourished in the course of severe acute illnesses sometimes die suddenly after the crisis has been reached, or during the period of convalescence. They go out with the tide, owing to nervous exhaustion or to some degenerative changes in the heart-muscle which have led to its enfeeblement. Faintness and giddiness are very common symptoms in children who have been the subjects of acute diseases, even when they have been well cared for, and it is very noticeable in them sometimes that a pulse, which remains good while the patient is still and recumbent, becomes frequent and poor on even slight exertion, betokening a feeble and irritable heart. One could well understand the occurrence of a fatal syncope if such a case were not carefully tended and the strength maintained.

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* Read before the Society for the Study of Disease in Children, December the 16th, 1904.

A study of the excellent Reports of the Registrar-General, unfortunately, is quite unable to help us to elucidate the causes of the sudden deaths under consideration on this occasion, because, for the most part, they have been certified as cases of diseases of various kinds, and, where inquests have been held, no doubt many of them have been registered as due to congested lungs, or to whatever obvious condition has been revealed by an autopsy, or by clinical examination if the child has been seen shortly before death.

In any chapter which has been written on this subject it has been customary to classify the cases as being ascribable to syncope or asphyxia, to pulmonary, gastro-intestinal, nervous, and other rarer causes; but, while recognising that these may be convenient headings under which to introduce the matter, it must also be recognised that sudden deaths among children are not infrequently due to certain toxic conditions, which it would be difficult to group under any particular system because they tend to affect several, the fatal issue sometimes being put down to gastro-intestinal, at others to pulmonary or nervous, disorders, according to the symptoms which had prevailed beforehand.

My chief reference will be to this class of cases, which has been familiar to me during a considerable number of years in connection with some institutions devoted to the care and keeping of children in which I am interested.

In studying these cases one of the great difficulties to be contended with is the fact that the deaths may take place so suddenly and so unexpectedly, with such trifling premonitions, that the child is not seen by a medical man at all, as the following case well exemplifies.

Last December, while the boys of one of our Industrial Schools were having an entertainment, which had been preceded by a tea, consisting of boiled ham, with sponge cakes and bread and butter, one of the little lads was noticed to be coughing a good deal in a way which was described as being rather irritating than distressing. He had previously been quite well, and it was the fact that his cough disturbed the entertainment that directed attention to him. The governor gave him some sweets, which he sucked without relief, and at last he very cheerfully went to bed and took an apple and an orange with him to compensate for the disappointment of losing the fun. Half an hour later the under matron was passing through the dormitory, and noticing the lad in bed lying very still, she went up to him and, turning his head, found that he was dead. Some fluid escaped from his mouth. Only half an hour had elapsed since this boy left the hall, and in the meantime he had undressed and tucked himself into bed, the apple and the orange which he had taken with him being found under his pillow. I, unfortunately, was not notified of the post-mortem examination, which was made by my house-physician at the Royal Southern Hospital (by order of the coroner), whither the body was taken, but in his evidence at the inquest he ascribed the death to syncope. There was evidence of bronchial catarrh, but there was nothing in his larynx or windpipe. The stomach was full, and he suggested that the death had been caused by a violent fit of coughing. I should have felt disposed to consider that this death had resulted from laryngeal spasm or from some respiratory obstruction causing asphyxia, but for the circumstance that other somewhat similar cases had occurred in the same and some other schools—so frequently, indeed, that they received the appellation of "rapidly fatal institutional diseases" in a Report (subsequently published as a Blue Book) which was furnished to the Home Office concerning them about eight years ago by Dr. Sidney Coupland. Little light was thrown upon them at that time, but the general impression was that they were pneumonic in character.

At the same institution on February the 13th, 1895, a boy was brought into the sick-ward who had complained of headache to his playmates during the day, and had also been sick. Towards evening, with some suddenness, he was seized with violent vomiting and had some diarrhœa. He died within three hours, after becoming in succession quite powerless, deeply livid, and unconscious. There were crepitations throughout both lungs, and the immediate cause of death was asphyxia.

At the post-mortem examination, which was held on the following day, beyond some pulmonary engorgement, nothing was found to explain his death. The temperature was not recorded.

On July the 7th, 1897, a boy, previously strong and healthy, complained of headache on going to bed at 8 p.m. At 10.30 p.m. the master in charge of the dormitory woke the boys to empty their bladders, theirs being a dormitory devoted to boys who occasionally wet their beds. This lad again complained of headache, which was evidently severe, because he cried about it. In the early morning of July the 8th he complained to one of his school-mates that he felt very weak and ill, and at 6.10 a.m. the ward monitor called the ward master, stating that he had found him kneeling by his bedside, trying to get into bed, but so weak that he could not get on to his legs, and had not power to drag himself in with his arms. After lifting him into bed, he was seen to be breathing with difficulty, he became unable to speak, and appeared to be unconscious. It was observed that he had evacuated his bowls in bed during the night. He died at 7.40 a.m., cessation of the respiration anteceding that of the heart. The temperature before death was 101·6° F. He looked exactly as though he had been strangled or suffocated, the whole body being intensely cyanosed everywhere, the eyes congested, and the veins of the neck turgid. The post-mortem examination revealed a very small patch of pneumonic consolidation in one of the lungs, and both lungs were much congested, a dirty brown fluid exuding from their cut surfaces. The brain and other organs presented no marked abnormality. On November the 11th, 1897, four months after the death of the boy which I have just recorded, another lad, previously perfectly well, complained of sickness on going to bed. He was thought to have a bilious attack, and some simple medicine was given by the matron. He was sick several times during the night and had a little diarrhœa, but towards morning he was thought to be sleeping quietly, and the matron kept his breakfast warm for him. Since, however, he seemed to be sleeping rather too long, she presently went to rouse him, and found that he was dead. I was hastily summoned, and there he lay curled up on his side, livid and apparently suffocated, just as the other boy had been. The body was cold excepting the abdomen, and he had evidently been dead for several hours. The coroner (with a perverseness which is detrimental to scientific investigation, and especially in a case like this, which puzzled us and alarmed us for the health of the whole institution) did not grant a post-mortem examination, and we can only assert on clinical grounds that this and the former case were probably of the same nature, and due to the same cause.

I might multiply examples of this sudden and terribly fatal disease by quoting other cases which have occurred in my own practice, or which have been reported to me from various sources. I had a very similar case in the School for the Deaf and Dumb in 1893, and many have come to my knowledge as having occurred in other schools, whether for boys or for girls.

In most of the cases it has not been possible to associate the illness of these children with any obvious cause. On one occasion a drain in the school-yard was open for the repair of some flaw, but the others were unaccountable; nothing could be found in the sanitary conditions so far as drains were concerned, and the food was not apparently at fault. But I found one circumstance which aroused my suspicions and led me to recommend a radical alteration in the school hygiene, the adoption of which has apparently been followed by beneficial results, not only with respect to sudden deaths, but also in the general health of the institution. I refer to the methods of bathing the children.

There were two hundred boys in the school in which the fatal cases which I have recited occurred, and once a week they got a bath, all being bathed on the same day in a plunge bath, containing about three thousand gallons of water which was heated to 90° F. by means of steam. The boys were bathed in batches, those suffering from skin or ear troubles constituting the last batch.

Imagine, gentlemen, the state of that water after being used by even a fourth of the total number of lads—the horribly poisonous organic matter which it would contain, not to speak of the micro-organisms. Drs. Ernest Glynn and J. C. Matthews, in an investigation which they made ("On Bacteria in Public Swimming Baths"*), estimated that each bather shed about six thousand million bacteria, and that the number of organisms in this bath of 3000 gallons would rise to ninety thousand per c.c.

The bathing arrangements were immediately altered and the boys are now bathed on three days a week, every lad being washed with soap and water before entering the plunge; and it is very suggestive that whereas the death rate in the school had during the previous five years averaged 2·8 per cent. and only one year had passed without some deaths, which were mostly put down to pneumonia, no deaths occurred for four years and none from diseases of the rapidly fatal type, until the one which I quoted as having occurred a year ago, the cause of which was never ascertained.

I suspect very strongly that the toxin which causes these sudden deaths poisons the respiratory centre, and that the effects upon the lungs, which are noted sometimes as being simply engorged and œdematous, at others as presenting perhaps a small pneumonic patch, are not necessarily primary causes of death at all.

I would like to pursue this subject by referring to some cases of toxæmia resulting from sewer-gas poisoning in schools, but since none of them were fatal, I fear that I must refrain from enlarging upon an interesting matter and proceed with the material for this discussion. One of the most distressing types of sudden death is that which occurs in infants having all the appearance of robust health, and although a rare event, not a few cases have been recorded. In 1894 Dr. Harris* of Birkenhead spoke at the Medical Institution in Liverpool, concerning the appalling suddenness of the death of a healthy child aged 5 months, a well cared for, well-nursed, closely looked after baby which had had no previous ailments. On the day of its death he had been sent for because the child had had a crying night and seemed in pain. Its temperature, pulse, and respirations were normal; the lungs, heart, and other viscera right; the abdomen slightly tender to touch, but without tumefaction; urine said to be scanty. Dr. Harris diagnosed intestinal irritation, and ordered a dose of castor-oil at once, and five drops of sweet spirits of nitre occasionally during the day. The bowels were copiously moved, and in the afternoon the child was reported as about himself again. At five minutes to six in the evening it was started with a bottle by its mother, and left taking it on the head nurse's knee quite as usual. At two minutes to six the nurse noticed a change, signalled for the mother, who, coming up at once, saw that it was death.

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* Thompson, Yates, and Johnson, 'Laboratory Reports,' 1903.

There was no choking, cough, or struggle, and the face was quite pale. The post mortem revealed nothing wrong with the viscera. The brain was not examined. Dr. Harris said death was from the heart, there was not a trace of asphyxia in it, and he asks the question, "Why should a healthy heart stop without a moment's warning." I think the only rational explanation of a case such as this is the one advanced by Dr. Buzzard about twenty-three years ago, when, in speaking of a rare case of infantile paralysis, in which the face on one side was implicated, he suggested that this affection of the facial muscles was uncommon, because if the nucleus of the seventh was involved, that of the vagus would probably be also affected, and sudden death result. One cannot here enter upon a dissertation concerning infantile paralysis, but the feeling is growing that it results from a toxin the nature and source of which are not at present understood. The fact that instances have been recorded where two children in a family have been simultaneously affected is suggestive, and it seems probable that we shall have to look for some flaw in nursery hygiene to explain this curious and selective poison.

These, gentlemen, are examples of what I mean by rapidly fatal diseases resulting directly from toxic influences, and no doubt there are many others which might be classed under this heading, although they are more evidently associated with infective processes, if not with organic changes in the viscera. We must not forget in this relation the rapidly fatal cases of scarlatina, where the patient dies overwhelmed with the poison, and that occasionally the same event occurs in measles, quite apart from the results of pulmonary involvement. I remember seeing such a case in an adult, a lady who caught the infection from her infant. She had only felt really ill for about twenty-four hours, although she must have been suffering for a few days, because she was covered with rash. On my arrival at the house, she was just dying (having become suddenly worse) from hyperpyrexia, the temperature in the axilla being over 109 °F.

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* 'Liverpool Medico-Chirurgical Journal,' 1894.

In these septic fevers sudden death occasionally results from hæmorrhage from the stomach, which comes from small pin-point or pore-like ulcers in the mucosa which can be seen, if formalin be injected into the stomach immediately after death has taken place so as to prevent post-mortem digestion. These ulcers appear to be embolic, and are usually derived from some local septic focus. I have seen one example in a case of measles, complicated by septic epiphysitis with involvement of the knee-joint where this profuse and unexpected hæmorrhage from the stomach took place, and, being uncontrollable, was the cause of death.

There is another hæmorrhagic condition which is worthy of note here, because it is quite distinctly a cause of sudden and unexpected death in infants and children; I refer to those somewhat rare cases where after an illness of only a few hours, generally characterised by diarrhœa and vomiting, followed by marked lividity and collapse, and often by the appearance of petechiæ, or bruise-like markings in the skin, the child dies and the post-mortem examination reveals hæmorrhages into the suprarenal bodies; I have seen an instance of this disease, and several have been reported.* Perfectly healthy and robust children are apt to be attacked and die in the most unexpected way. The histories of their cases remind one of the toxic diseases which were related at the commencement of this paper, and no doubt they result from poisons of a similar type; indeed, I omitted to mention in connection with the second case which I quoted that almost immediately after the child died another lad had a feverish attack, accompanied by headache and vomiting, and quickly followed by purpura and thrombosis in the veins of both legs, which rendered him ill for a prolonged period.

I am disposed to believe that some volatile sewer product which gravely poisons the blood may sometimes cause these types of disease, or some poisons of similar character derived from other organic sources.

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* *E.g.* "Some Cases of Hæmorrhage into the Skin and Suprarenal Capsules," by Percy S. Blaker, M.R.C.S., and Bernard E. G. Pasley, M.R.C.S., etc., 'British Medical Journal,' 1901.

Before leaving the subject of the toxic and septic diseases which are associated with hæmorrhage, I must mention one other case where, in a little boy convalescent from scarlatina, so well that he was able to sit up and play with his toys, life was speedily ended by bleeding which took place from a small sinus in the neck, which had resulted from a superficial incision into a periglandular abscess. Colliquative necrosis had taken place unsuspectedly into the carotid artery, and a tremendous hæmorrhage resulted which rendered him unconscious, and he subsequently died in consequence.*

Besides the sudden deaths which take place in scarlet fever and measles, I must simply mention in passing that similar events have taken place in typhoid fever in children, especially where the disease has been overlooked or mistaken for simple diarrhœa, or for some unimportant febrile disturbance. Dr. J. Pearson Irvine, in a paper which he published in the 'Lancet' of November, 1877, records a number of cases of sudden death in young children, most of whom were brought in dead to Charing Cross hospital, and among them were instances in which the pathological appearances indicated that the children had been suffering from enteric fever. Another point which should always be inquired into when sudden dissolution takes place is the possibility of an antecedent sore throat or other indication of diphtheria. I well remember a boy friend of my own dying suddenly after making some effort when he was recovering from what was taken to be a trivial illness, which proved to have been a diphtheria which had occasioned a degeneration and dilatation of his heart-muscle. Another striking case of the same description is recorded by Dr. George Carpenter, in Vol. IV of the 'Reports of the Society for the Study of Disease in Children,' pp. 127—131, where a girl, aged 7 years, died suddenly from an uncomplicated myocarditis which probably resulted from an undetected diphtheria.

Fulminating smallpox will rapidly kill children as it does adults. A boy was brought into the Stanley Hospital many years ago, when I was physician there, in a condition of severe illness, the nature of which was not quite apparent in the out-patient room, but he was sent up to a small ward for observation. The nurse who was attending to him left the room for a moment, and on her return was amazed to find that he had died quite suddenly. The house-physician, who alone had seen him, then discovered that there was a rash on the lower part of the abdomen, and he expressed the opinion that the case might be one of malignant scarlatina. No doubt it was an example of the early roseola distributed over the lower abdominal inguinal regions which is seen in some cases of severe smallpox, for thirteen days afterwards the nurse who had attended him and several others went down with that disease.

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* Recorded in 'Pendlebury Abstracts,' 1885.

Varicella is another disease which, although so unimportant in general, has its serious aspects. Varicella gangrenosa is a very rare condition associated with necrosis of considerable cutaneous areas. I have seen three cases of it, one under the care of Dr. Ashby, when I was house-physician at the Children's Hospital in Pendlebury, and the two others in the out-patient room of the Liverpool Royal Southern Hospital; each of these children died quite suddenly of cardiac failure, the result probably of exhaustion. It seems only liable to occur in weakly children or in those who are already the subjects of tuberculosis.

I am afraid, gentlemen, that in permitting me to open this discussion, in the section which refers to organic diseases, you have afforded me so wide a scope that it would weary you were I to deal with the subjects in a very exhaustive way. I have spoken of the toxic and septic diseases at some length because a series of them have come my way, and collective information is sometimes useful, and I shall leave others to relate their experiences regarding sudden deaths connected with the circulatory, respiratory, and the systemic organs, but in speaking of sudden deaths in children who are the subjects of diseases presenting well-marked structural changes in the organs, I shall be as brief as possible.

Heart-disease in children has not often in my experience tended to cause sudden death. Isolated cases have occurred, and they have generally been in cases of mitral disease. I cannot say that in any of the cases the death has been unexpected, because almost invariably the children have been bedridden and actually suffering from the results of the disease. There is one case, however, always in my memory which has impressed me with the necessity for carefully watching cardiac cases to which digitalis is being administered. It was a little girl aged about 8 years, suffering from mitral disease, who had been under treatment for some time, and she had improved greatly. I visited her late one night when making my rounds as a house-physician, and while speaking to her, she suddenly cried out that she was dying, stood up in her cot, and fell down dead. At the post-mortem examination neither ante-mortem clotting nor embolism was discovered, but the ventricle was firmly contracted, and I believe that digitalis, which she had been taking for some time, was probably responsible for it. I have no notes of this case and am speaking from memory concerning it, but the tragic circumstances connected with her death impressed me in a way which renders my recollections of the facts very vivid. It is surprising that the myocarditis which is present to a greater or lesser degree in some cases of acute rheumatism does not cause sudden death in children. The heart affection hardly ever produces symptoms during the course of the fever, but I recently had one boy, aged 12 years, under my care, whose condition gave me great anxiety on account of the irregularity and enfeeblement of his heart's action, with corresponding weakness of the pulse, and impoverishment of the first sound. He was exceedingly breathless on the smallest exertion and tended to faint, so that he had to be kept carefully recumbent. I had no doubt that a serious myocarditis complicated an endocarditis which was manifestly present, but he recovered at last, so far as his immediate condition was concerned, permanent valvular disease resulting from the endocarditis. My impression is that myocarditis is a very dangerous condition and one which if extensive would be very liable to cause sudden death ; but as I have said, it must be a rare cause, so far as its connection with acute rheumatism is concerned. In infants congenital heart-disease is a distinct cause of sudden death, if not shortly after birth, within a few months, the symptoms preceding the death often being of a convulsive nature. In older children death is not usually sudden, and in consequence it is fairly common for it to take place in the hospital wards.

Regarding diseases of the respiratory organs, I do not propose to dwell upon the subject of laryngismus stridulus, which, being a spasmodic affection, may fairly be dealt with in connection with functional disorders causing sudden death. There are just three conditions to bear prominently in mind with reference to this system, viz. pulmonary collapse, pulmonary inflammation, and pleurisy. Collapse of the lung is a subject of considerable importance in connection with the so-called death from overlying, and there is little doubt that some cases which have been ascribed to carelessness and drunkenness have been due to acute congestive conditions with catarrhal secretion and collapse. Brouardel, in his excellent book on " Death and Sudden Death," directs attention to this point and to the necessity for carefully distinguishing these cases lest a mistake should give rise to the assumption that criminal neglect or intent had to do with the case. Infants in a moribund condition are not infrequently brought to the hospitals, livid and gasping from this cause, after illnesses of only a few hours' duration. In wasting and exhausting diseases this same cause of sudden death in infants is of course common enough, but is not one of the unexpected events in these cases. In pleurisy the pain may be sufficient to cause collapse and death, but if an effusion takes place rapidly in a case of acute pleurisy the respiratory distress becomes intense, practically from the collapse of the lung. I recollect seeing a child which was dying after only a few hours' illness from a pleurisy complicating post-scarlatinal nephritis. On withdrawing a small effusion which had taken place, the relief was immediate and permanent.

Regarding pneumonia as a cause of sudden death, excepting in the catarrhal types, it is not usual even in young children, but it certainly occurs and may prove rapidly fatal.

I shall not take up time by dwelling upon the nervous, alimentary, urinary, and cutaneous conditions, nor yet the syphilitic disorders which occasion sudden death; they are mostly well known and I mention them only in case they may bring to mind among those present cases which may be recorded in connection with the subject in hand.

CONGENITAL LESIONS OF THE DIAPHRAGM AND RESPIRATORY INSUFFICIENCY IN NEWBORN CHILDREN.

By Ambrogio Mori, M.D., Florence.

The diaphragm in intra-uterine life does not present many deviations from the normal. Practically the only congenital pathological lesion of this structure ever met with is that known as "hernia of the diaphragm." The study of this condition is not alone a matter of scientific interest, but is of extreme practical value, for this hernia of the diaphragm is by no means one of the rarities of medicine. It occurs, on the contrary, with a comparative degree of frequency. The anatomical changes in congenital hernia of the diaphragm are of great interest and variety. Different types of the condition have been described by Parise, Dubois, Vrölich, Bischoff, Ikeda, Martin, and, more recently, by Garlich, Cocchi, Booker, and by Sidney Gilford (British Journal of Children's Diseases, vol. i, No. 12).

The following cases, which may be considered typical, I have already referred to in a paper in the "Annali d'Ostetricia e Ginecologia" (1904). I personally investigated these cases in the Obstetric Clinic of Florence under the supervision of Professor E. Pestalozza.

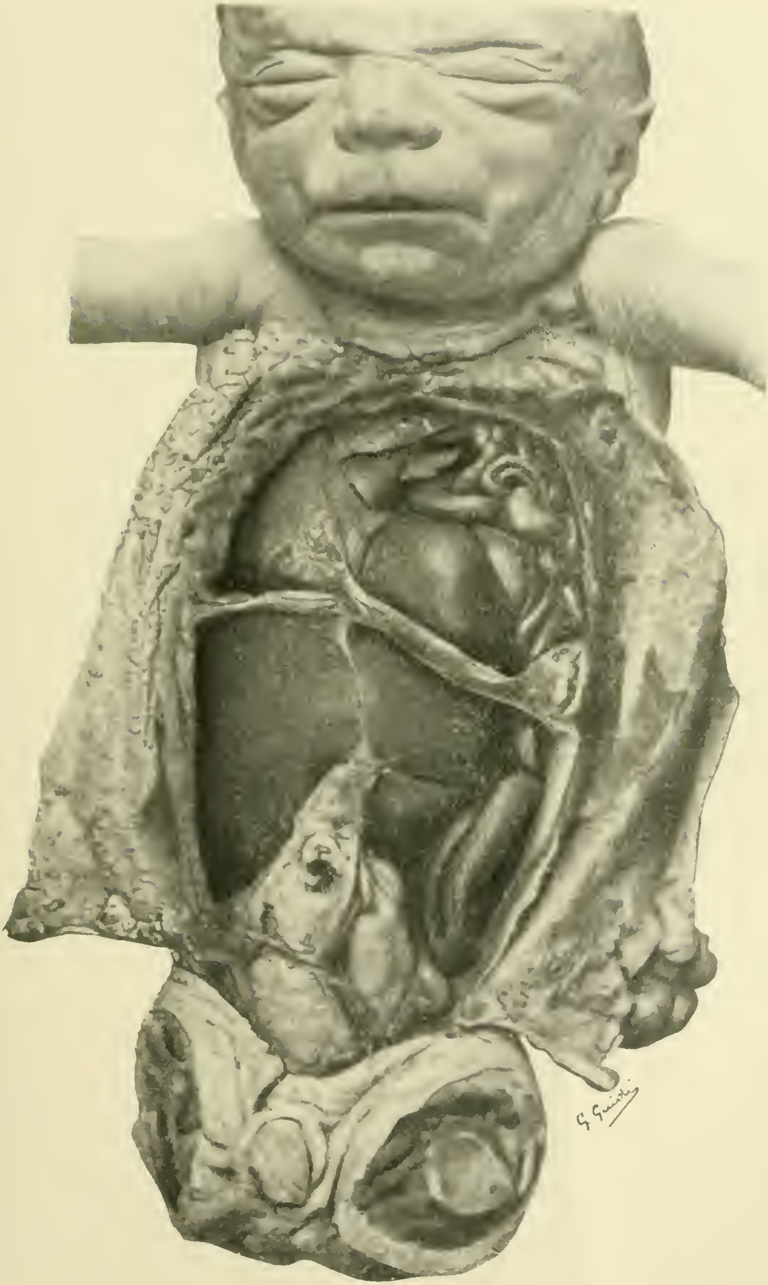
The first case is that of a female infant, which died after a few feeble inspiratory movements. The body weighed 2670 grms. and was apparently well developed. At the autopsy there were found in the left pleural cavity numerous coils of large and small intestine, not covered by peritoneum. The left lung was atrophic ; the heart was displaced to the right.

In the second case the subject, at the time of its birth, was of a rosy colour. It struggled violently and uttered a few weak cries; there were feeble efforts at respiration. All attempts at artificial respiration proved useless and death soon took place. The post-mortem examination confirmed our suspicions as to the existence of interference in the expansion of the lungs as the result of some congenital defect. On the right side of the diaphragm a wide fissure was found through which a portion of the right lobe of the liver and some coils of the small and large intestine had penetrated into the thorax and compressed the lungs.

The third case was that of a fœtus born in a slightly asphyxiated state. The child weighed 2750 grms., and was apparently well developed. The usual means of overcoming asphyxia were adopted, and soon found to be unavailing, death ensuing in half an hour. Fig. 1 represents an anterior view of the thoracic and abdominal cavities. There are seen above and to the right the heart with the pericardial sac; under the sterno-clavicular articulation, the thymus; below, the two rudimentary lobes of the left lung. Underneath is seen a portion of the left lobe of the liver; above and to the left, the stomach, small intestines, cæcum and vermiform appendix. The abdominal cavity is almost completely occupied by the liver, below by the bladder; laterally to the left are seen a portion of the rectum, sigmoid, and a tract of the ascending colon crossing the left diaphragmatic fissure. Viewed from behind, and in the dorso-lumbar region, will be noticed, in the left pleural cavity, coils of the small intestine arranged in the form of a pillar (Fig. 2), whilst a portion of the transverse colon is observed to rest upon the posterior diaphragmatico-costal sinus. To the right are situated the three lobes of the right lung and, more externally still, a portion of the right ventricle of the heart; beneath this, the right diaphragmatic cupola, itself intact, covers a part of the kidney. On the left side a portion of the thoracic wall was left, in order to preserve the anatomical relationship of the parts. Below this, the left kidney is almost hidden by adipose tissue.

In all these three cases the placenta presented a remarkable state of hydramnios. The liver, as in all previously recorded cases, was enormously developed. In the third case, histological examination showed portal periphlebitis and small cellular infiltration,

Fig. 1



probably of syphilitic origin; a condition of osteo-chondritis was also found in the femora. In addition, in all three cases, in the parts surrounding the diaphragmatic fissure complete adhesion of the pleural and peritoneal serous membranes was found. There were no cardiac valvular lesions, or defects of conformation of the big veins, nor were there any defects in the nervous system and the chief respiratory tracts.

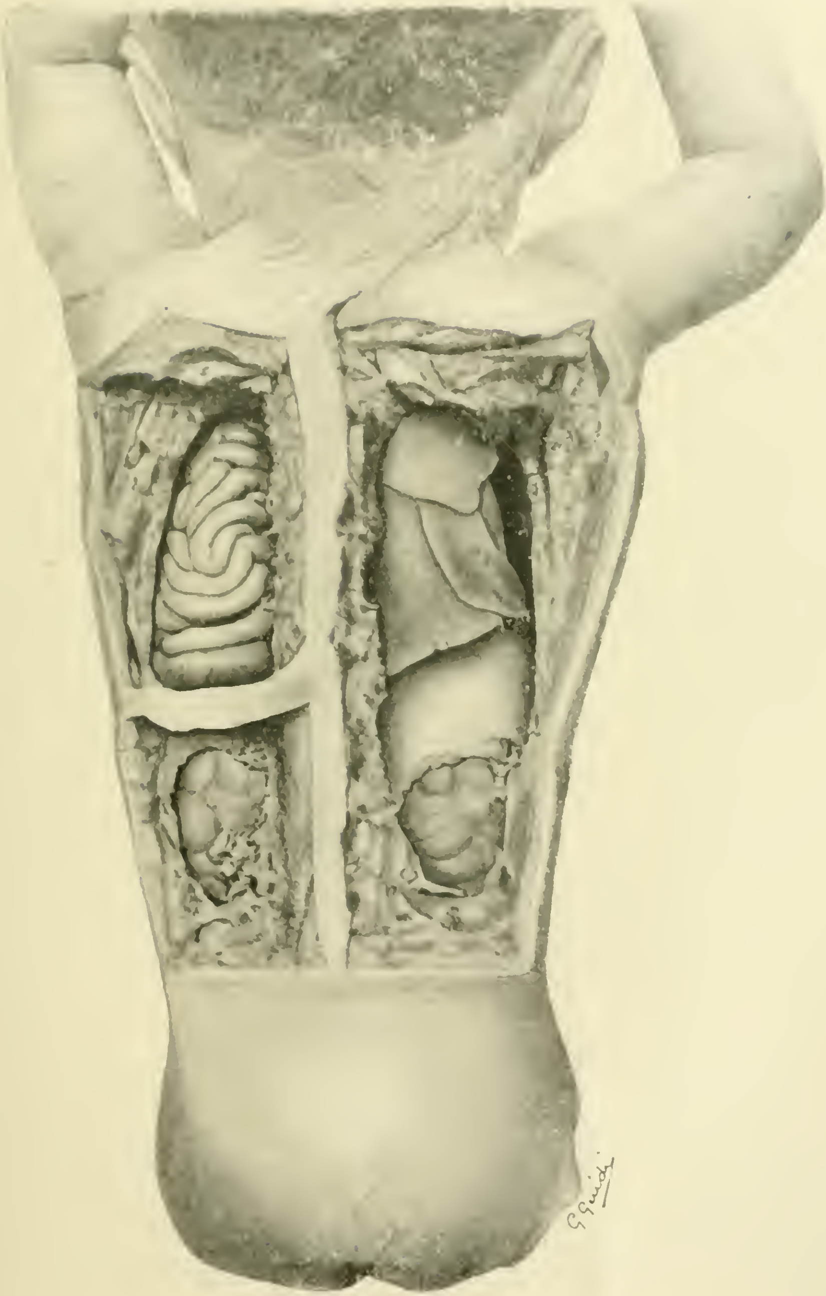
To explain the origin and mechanism of congenital diaphragmatic hernia, most writers have advanced a theory which is simple but unconvincing—namely, that the condition is merely due to an incomplete closure of the diaphragm. In other words, a hernia has existed since the earliest period of fœtal development. The primary diaphragm is formed by the central "transverse mass" and the lateral mesocardia, which together constitute an incomplete septum between the thoracic and abdominal cavities. This septum is only later completed by the "pillars of Uskow" and strengthened by the muscular elements which proceed from the cervical miotoms and divide the connective tissue into two portions, the diaphragmatic pleura, and the diaphragmatic peritoneum.

Now, this hypothesis does not always afford a sufficient and rational explanation of the mechanism of congenital diaphragmatic hernia in all its varieties. After having compared the results of various writers with my own personal observations, I concluded that it would be profitable to investigate the part which might possibly be exercised by the liver in the production of fœtal diaphragmatic lesions. I therefore examined in a number of fœtuses of different periods of development the topography of the different intra-thoracic and abdominal organs in connection with the constitution of the diaphragm and the resistance of its muscular, aponeurotic, and serous elements, noting at the same time the ratio of the volume and weight of the liver to the dimensions and weight of the whole fœtal organism. In the cases of diaphragmatic hernia that I have observed I also studied the anomalies of the course of the phrenic nerves.

My researches lead me to believe that diaphragmatic hernia, when it constitutes the only congenital lesion of the fœtus, does not consist in a simple monstrosity due to arrest of development at an early embryonic stage, but represents a lesion of the diaphragm consequent on increased intra-abdominal pressure.

The primary cause of this pressure and phrenic displacement is due to a considerable increase in volume and weight of the liver in consequence of circulatory and parenchymatous alterations in that organ, frequently of syphilitic origin. In any event congenital variations in

Fig. 2.



diaphragmatic resistance, even with a properly formed diaphragm, predisposes to the development of a hernial sac the contents of which is apt to vary.

As an additional factor in the above-mentioned pressure must also be recognised, especially in the last months of fœtal life, an enormous development of the intestine, and associated with which is the filling of the coils with an accumulation of meconium in the bowel, which forces the intestine, pushed out of place by the liver, to break through the diaphragm.

But exception may be taken to this explanation: Why should the diaghragmatic cupola, and not the abdominal walls, yield to increasing pressure by the liver and the intestine?

I think this objection can be met by a recognition of the weakness of the fœtal diaphragm, which is formed of very thin tracts of pleural and peritoneal serous membrane with interposed muscular fibres. I have verified the existence of such septa, already mentioned by Langenbeck, in the different fœtuses I have dissected, and I have invariably found the muscular interspaces between the costal and the vertebral origin of the diaphragm more or less covered by the kidney and the liver, and the perirenal connective tissue.

As further predisposing causes to the production of diaphragmatic hernia, given an excessive development of the liver, must be mentioned the tendinous arch that gives passage to the aorta; the œsophageal aperture; and, in an inferior degree, the aperture of the inferior vena cava, which is in more intimate connection with the diaphragmatic muscle.

The variety of the contents and the absence of a sac in these diaphragmatic hernias, prove the poor resistance offered by the diaphragmatic cupola to increased pressure by the abdominal viscera.

Besides, considering the greater frequency of diaphragmatic hernia on the left side, a reasonable inference is that the sharp left lobe of the liver tends to break through the diaphragm. There is also a tendency towards a relative fixity of its right lobe by the vena cava, and in this way the mobility of the intestines imparts a see-saw movement to the sharp edge of the left lobe of the liver, already so enlarged as to invade the iliac fossa and the left hypochondrium.

The clinical symptoms of my cases, as well as of those mentioned in literature, may be explained by the pressure exercised by the displaced viscera on various organs. Thus pressure on the lungs and heart produces cyanosis. Dyspepsia, which is observed only in those rare cases in which respiratory sufficiency can be established for a certain period, is probably due to the difficulty of the passage of food into the stomach, associated with distension of the viscera. Intestinal obstruction, due to an anomalous peristalsis and the presence of the diaphragmatic constriction, brings life to a close in new-born children with diaphragmatic hernia who have survived temporarily. The tetanic and convulsive phenomena sometimes observed in these cases are due to the anatomical and functional alterations of the digestive apparatus.

In the cases which came under my observation the clinical facts which induced me to suspect the presence of a diaphragmatic hernia were the following: displacement of the cardiac impulse, epigastric indrawing, enormous swelling of the liver, detection of gastric and intestinal sounds in the thorax, and the differences between the percussion notes of the two sides of the thorax. Other physical signs that may be mentioned are the transmission to the chest wall of the peristaltic gastro-intestinal movements and deficiency of expansion of one side of the chest.

Ribemont's cannula is not only a useful therapeutic aid, but it is also a means of confirming or excluding the existence of diaphragmatic hernia, whilst Schultze's artificial respiration in cases of serious diaphragmatic hernia without a sac perhaps does more harm than good, as the intestinal coils, instead of being withdrawn into the abdomen, are more and more thrust into the thorax.

However, the physical signs are not always pathognomonic, and the symptoms are variable and difficult of interpretation.

In regard to treatment there is very little to be done. Only cases of diaphragmatic hernia of inconsiderable bulk, possessed of a sac and unconstricted by the diaphragm muscle, allow the continuation of life, and then only for a brief period. But life in such cases is always associated with dangerous symptoms, and only in rare cases can correct diagnosis by the physician in combination with operative intervention by the surgeon, prove of assistance to the infant.

The Society for the Study of Disease in Children.

A MEETING of this Society was held on January 20th at 11, Chandos Street, W., Dr. PERCY G. LEWIS (Folkestone) being in the chair.

Two Cases of Volkmann's Contracture which had occurred in the right forearms of two girls, aged 2 and 7 years respectively, as a result of fractures, were shown by Mr. F. JAFFREY.

A Case of Lupus of the Epiglottis and Left Vocal Cord in a boy aged 12 years who had been treated by the galvano-cautery was shown by Dr. W. H. Kelson. The upper part of the epiglottis was wanting, and the stump had been covered with red papules. The ventricular bands, the left vocal cord, and the anterior commissure were similarly affected. There was no history of syphilis, no evidence of lung disease, and no tubercle bacilli had been detected in the sputa.

A Girl, aged 12 years, who had been brought before the Society in December, 1903, as a Case of Aortic Stenosis, was shown by Dr. L. G. Guthrie. He was still of the opinion that the physical signs indicated aortic disease, and thought that there might be some congenital malformation in the neighbourhood of the aortic valves. The girl was highly rheumatic. As on the former occasion, various opinions were expressed on the physical signs and the conclusions to be drawn from them.

A Boy, aged 10 years, with Marked Double Aortic Disease and Mitral Regurgitation was shown by Dr. A. Morison. There was an indefinite history of rheumatism.

A Child with Congenital Pulmonary Stenosis and probably a Patent Septum Ventriculorum was shown by Dr. George Carpenter.

A boy, aged 4 years, with a Peno-scrotal Form of Hypospadias was shown by Mr. Donald J. Armour with a view to elicit the opinions of members of the Society as to the best kind of operative treatment and the best age at which to carry it out.

A girl, aged 6 years, with Hæmophilia was shown by Dr. G. E. C. Pritchard. It was hereditary in the male line for two generations and evidenced in the third in a severe form in a female. The child had suffered from severe attacks of epistaxis since babyhood. Her father and grandfather were affected, but no other members of the family.

A Case of Generalised Lichen Planus of three months' duration in a boy aged 6 years, was shown by Mr. G. Pernet. The boy had a "tower skull," ptosis, with absence of the upper movements of the eyes, and a highly arched palate. **A Child with Circinate Gyrate Erythema Multiforme** was also exhibited by him.

A Specimen of Congenital Multiple Occlusions of the Small Intestines from a seven months' infant who died nine days after birth was shown by Dr. J. G. Emanuel (Birmingham). The child had vomited since birth, but no stool had been evacuated. As the result of an enema a large motion of meconium was passed. There was complete atresia of the bowel at the duodeno-jejunal juncture, the duodenum being much hypertrophied and dilated, being larger even than the stomach. In two other places the jejunum was completely absent for about half an inch. In five other places, in the jejunum and upper part of the ileum, the gut was completely occluded by annular constrictions. There were no signs of intra-uterine peritonitis.

A Specimen of a Collar Stud impacted in the Œsophagus and Perforating the Trachea was shown by Mr. A. T. Marshall. It was removed post mortem from a female infant, aged 7 months. It had produced consolidation of the right lung, ulceration into the trachea an inch above the bifurcation, and pus in the trachea and the oesophagus.

Editorial.

PHYSICAL DEGENERACY.

In the debate on the King's Speech at the opening of Parliament on February the 15th last, Sir John Gorst directed attention to the physical degeneration of the people of this country, the most important cause of which in children was, he thought, improper and insufficient feeding. An elaborate Report on the condition of Dundee children based on material collected in four board schools, one voluntary school, and elsewhere, prepared by the Dundee Social Union, has been published recently. The Report takes cognisance of the weight and height of over 1000 boys and girls and gives the weights and lengths of a number of babies.

At first glance a comparison with Sir Francis Galton's figures furnished to the Anthropometric Committee of the British Association in 1881 is unfavourable to the Elementary School boys as regards height. The average weight of boys of thirteen is about 9 lbs. less than Sir Francis Galton's averages, while the average of girls of twelve is more than 9 lbs. below the average for the Harris Academy, Dundee. The Elementary School children are at all ages distinctly below the Harris Academy in both weight and height.

The lengths and weights of 498 babies were obtained from the books of Dundee Maternity Hospital, and these infants may be taken, broadly speaking, to belong to the same class as the poorer elementary school children. The averages for the boys are below Sir Francis Galton's averages in weight and above in height. The tables prepared taken with the results of the medical examinations, leave no doubt that in Dundee there must be a large number of children whose health is impaired and whose development is retarded by insufficient nourishment. What is happening at Dundee is taking place in other parts of the United Kingdom. Quite recently it was learnt that at least three hundred children were attending the Swansea schools in an ill-fed condition. These figures were not arrived at haphazard, but by most careful inquiry on the part of the teachers.

That physical degeneration and underfeeding go hand in hand there can be no question. The subject is, however, quite a complex one, and demands a variety of remedies for its cure. The conditions which produce it may be divided into *ante-natal* and *post-natal*. First and foremost is the physical and mental condition of the parents. It is obvious that perfect specimens of humanity cannot be produced by mental and physical degenerates; nevertheless, matrimonial alliances of the unfit are of painfully frequent occurrence, and, unfortunately, these contracts are not among the least fruitful. The state of the mother's health during pregnancy is quite an important, and not sufficiently recognised, factor. Insufficient nourishment for the mother and the proper regulation of her health during such periods do not receive the care and attention they demand. If it is to be in the future the care of the State to provide meals for underfed school children, it should be equally its business to provide nourishment for poverty-stricken underfed pregnant and nursing mothers.

Perhaps the most important time of the child's life is the first two years of its existence. It is during these two years that it is threatened on all sides by death or, escaping that, it is in danger of physical degeneration. Here again the question of food is the all-necessary one, and the most important rule is that mothers should feed their nurslings at the breast. Breast-feeding among some women is unfashionable, among others it is physically impossible, and for others it is out of the question because the women have to earn their living away from home and, perhaps, provide for their husbands as well as their children.

An exhaustive scientific inquiry is urgently needed to determine the reason why in many instances mothers are physically prevented from performing this most important and most necessary function of motherhood and to suggest remedies.

To those among the poor who can nurse and are prevented every encouragement, and, when necessary, financial assistance should be given to them to enable them to breast-feed their offspring.

Hand-reared infants are at present at the mercy of the Legislature, the milkman, and others. The sanitary authorities throughout the kingdom are doing what they can to provide wholesome milk to the community, but their powers are at present inadequate. Attempts to escape the difficulty have been made by various sanitary authorities to render milk less innocuous to nurslings by sterilisation and to reduce infant mortality by affording the poor facilities to obtain a nutritious article at a moderate price at municipal milk depots which have been started for the purpose.

Sterilisation does not meet the requirements of the nursling. It destroys the germs but fails to reach the poisonous products produced by them in the food, and it renders the article less nutritious and often harmful. It is the placing of the cart before the horse, and it would be well for sanitary authorities to take into their confidence specialists in children's diseases before blindly rushing into the business of foster-mothers, an occupation for which they are not qualified. There is, however, a great work before them—the speedy acquisition of powers to compel milk traders and milk carriers to supply and deliver *clean* milk to the customer. *Dirty* milk is responsible for many infantile ailments and deaths, and accounts for a large number of physical degenerates.

The appalling ignorance of the poor in all matters of domestic hygiene is one of many causes of physical degeneration in the young. Poverty and neglect claim many victims, but maternal ignorance is the greatest offender. The child is at a disadvantage from the time of its birth onwards. The mother is unskilled in the art of feeding and clothing the infant. It suffers from lack of suitable food, lack of sleep, lack of attention, lack of fresh air, and lack of sunlight from its introduction into the world. A child aged 10 months, on whom an inquest was held in London the other day, was proved to have never breathed any atmosphere other than that of the dark and noisome alley in which it resided, and a dietary for the nursling of cold beef and pickled walnuts, whiskey and other harmful things not infrequently precedes the summons of numerous grief-stricken mothers to the coroners' courts.

But the infants in arms are not the only sufferers, and children of tender years are equally handicapped by the ignorance of their parents on the subject of the feeding and management of offspring.

Mothers, in addition to elementary education, have to learn much before the physical regeneration of the race is accomplished. They require to be taught all that a good housewife should thoroughly understand, viz. the value of money, the art of marketing to the best advantage, the proper storage of provisions when purchased, simple cooking, domestic and personal cleanliness and orderliness, thrift, needlework, the advantage of fresh air inside the dwelling as well as the necessity for suitable out-of-door exercise, and the knowledge of how to feed and manage babies. The abuse of alcohol by the parents in this country is responsible directly and indirectly for much of the physical degeneracy in our midst, and that this is so should be instilled into the minds of the young at the earliest possible opportunity. When the young woman of the future has been thoroughly grounded in the above knowledge she will be a fit and proper person to undertake the management of a household and to then become the mother of children, but not until then.

The school must step in where the home fails, and young girls must not only be instructed in the art of motherhood, but also in that of housewifery. The London County Council has recently established in the East End a number of classes for the instruction of young girls and young women in the care of infants and young children. The idea is an excellent one, and it is to be hoped that the instruction given will be quite modern and up to date. Studying from a contemporary a course of these lessons, it seems to us that some of them require revision at the hands of experts.

Next in importance as a factor in physical degeneracy is the employment of women labour. The infants of those employed must necessarily suffer, and suitable municipal crêches should be at the disposal of those thus unhappily circumstanced. Much of the underfeeding from which so many poor school children suffer is attributable to this cause—there are no home comforts and the children are neglected during the absence of their mothers.

That school children should not be underfed is obvious; it is not only cruel, but it produces a degenerate race, and is indirectly a source of danger to the State.

Whether free feeding—and, from a medical point of view, we are strongly in favour of free feeding, under certain conditions—should be undertaken by the municipalities or by private charity is a matter for discussion. The pauperising of children and the formation of bad habits at an early age is not good for their morals, and anything that tends to retard the growth of independence and self-reliance in the child is harmful and must not be encouraged. If the principle of free feeding underfed children be admitted it must be well safeguarded. Miss Marian Elliston makes a valuable suggestion to prevent pauperisation. The London County Council has some two hundred excellently equipped school kitchens for the instruction of school children in cookery adapted to the means of working class families. To these in neighbourhoods evincing a need for it she would attach a school restaurant at which the children could obtain halfpenny and penny breakfasts and penny or twopenny dinners. The food could be perfectly well prepared with the equipment provided. To meet special cases, to the head teacher could be given the right of presenting vouchers, at his or her discretion, either at half-price or free. Such a scheme would doubtless meet the requirements of many little sufferers.

Abstracts from Current Literature.

Medicine.

Toxic appendicitis without abdominal pain and with choleraic diarrhœa ('*La Clinique Infantile*,' *December*, 1904). **Segond** and **Moisard** describe this case, remarking upon its exceptional nature, diarrhœa being rare, but pain being always present at the onset. In this case, however, there was never at any time any pain, either spontaneous or elicited, in any part of the abdomen, and the only symptoms consisted in three attacks of vomiting and a diarrhœa so severe that there were more than thirty stools in the thirty-six hours previous to operation. The child, a male, aged 10 years, vigorous, large eater, was seized with vomiting and diarrhœa of fœtid stools the day after he had partaken of six sandwiches *à la mayonnaise*, in addition to ordinary meals. Temperature 39° C., pulse 120, tongue white furred, face dusky, abdominal signs entirely negative, but liver slightly enlarged. The general condition got worse, temperature falling and pulse rising; slight delirium supervened. At the operation the appendix seemed so little affected that it was doubted whether it was the cause of the symptoms, but subsequent investigation showed the cavity enlarged, filled with mucous detritus; the walls showed numerous follicular and interglandular hæmorrhages and a large ulceration caused by the confluence of several follicular abscesses opening into the cavity of the appendix. Streptococci were discovered. VINCENT DICKINSON.

Erythema multiforme of vesiculo-bullous type (*'La Clinique Infantile,' December*, 1904.)—**Dr. Barthelemy.**—A girl, aged 13½ years, menstruated for the first time without discomfort during a period of four days. Two days later she was seized with severe itching of the face and the appearance of red, prominent erysipelatoid patches round the mouth, nose, and eyes. The following day they had extended all over the face and were covered with large vesicles filled with turbid liquid; the next day the vesicles became confluent and ruptured, and discharged an immense quantity of serum. The next day the symptoms ameliorated and crusts formed. Six days later the crusts fell off, leaving a perfectly healthy skin. With the exception of a slight sore throat there were no symptoms, either general or local, and complete apyrexia. Only staphylococcus albus was found. The etiology is obscure; there was no alimentary intoxication, no visceral infection or lesion, and no external cause. Under these circumstances the author considers probable a relation between the eruption and the establishment of menstruation. VINCENT DICKINSON.

Note on feeding by buttermilk (*'La Pediat. Prat.,' December*, 1904.)—**Méry** and **Guillemot** give an interesting communication on this subject. They observed the case of an infant, aged 7 months, weighing 5 k. 200 gr., admitted in a state of coma with convulsive crises due to improper feeding by bottle. There was extreme wasting and pallor, thrush, fœtid diarrhœa, and multiple subcutaneous abscesses. On a diet of broth some improvement and gain in weight ensued, but any attempt to replace it by milk resulted in immediate loss of weight and return of the diarrhœa and vomiting. Buttermilk in quantities of 150 grammes every three hours was then given, and a rapid increase of weight immediately took place, which was interrupted only when the buttermilk was temporarily omitted owing to a failure in the milk supply during three days. The gain in weight was about 80 grammes daily. After about three months the infant was able to take sterilised or boiled milk, and weighed 7 k. 300 grammes, and was in perfect health. Buttermilk has given in other hands daily gains of 100 or 150 grammes, but its effects are not constant nor striking; sometimes infants will not take it, or it produces vomiting and abnormal stools. The authors consider that it is the variable methods of preparation which influence the result. Buttermilk from the dairy gave uncertain results; that prepared in a laboratory was not much better, being often of an excessive acidity; the authors then prepared it themselves from the milk supplied to the hospital. The preparation comprises three stages: fermentation, churning, and cooking. Fermentation is a natural lactic fermentation, the chief agent in which is a streptococcus always found in the buttermilk of dairies and identical with a streptococcus found in the intestines of babies and which is less active than the bacillus found in milk. This explains why buttermilk, which is too acid, is not borne easily by infants, and this excess of acidity may be avoided by not letting the fermentation go on longer than twenty-four hours and by maintaining a temperature about 20° C. Churning is performed in a simple glass churn containing 5 or 6 litres for thirty or forty minutes, and to the buttermilk thus obtained is added 10 grammes of rice flour per litre, and the whole is cooked in a saucepan for forty-five minutes, during which time it must be continually stirred with a cream whip. Ninety grammes of sugar per litre are then added. VINCENT DICKINSON.

Erythema infectiosum: A new acute exanthem (*'Monatschr. f. Kinderheilk.,' October and November*, 1904, *p.* 286). **Theodor Escherich** under this title describes a condition which has been observed during recent years. The disease was first described in 1889 as an atypical variety of German measles. It was not until 1896 that Escherich recognised in it a separate condition. The disease occurs at intervals of a few years in epidemic form. It generally occurs in association with epidemics of measles. It appears to be spread by contagion, but is not very readily transmitted. The youngest case recorded occurred in an infant aged 14 months. The disease tends to occur in families, schools, etc. The period of incubation ranges from six to fourteen days. The onset may be marked by some slight degree of general malaise, but, as a rule, the general health is maintained unimpaired throughout, and the rash is the only clinical feature of the disease. The illness is ushered in by the appearance of a flushed and turgescent condition of the cheeks. This redness and swelling are sharply demarcated anteriorly by the naso-labial folds, whilst they fade away in the region of the ears. So far from being looked upon as a sign of ill-health, the mother often regards this appearance as a sign of blooming health on the part of the patient. More rarely, blotches and gyri take the place of the generalised redness of the cheeks. In addition, large, slightly papular blotches of bluish-red colour occur about the ears and the rest of the body. On the trunk these are sparse and may be altogether absent, whilst they are fairly densely studded over the extremities. On the trunk the patches are usually discrete, but they may become confluent on the extensor surfaces of the arms. In the case of the lower limbs, the eruption is most developed about the gluteal region and along the flexor aspects of the legs. The exanthem remains visible for six to ten days, and fades first from the face and trunk. On the extremities the blotches fade slowly, and are replaced by pale, net-like tracings, which may persist for a considerable period. The disease is worthy of observation on account of the readiness with which it may be mistaken for atypical varieties of measles, scarlet fever, and German measles. Its differentiation from these is important in connection with the question of isolation, for children suffering from erythema infectiosum may safely be allowed to return to school as soon as the facial exanthem has subsided. E. P. BAUMANN.

The treatment of eczema of the head and face of infants (*'Deut. Aerzte Ztg.,' No.* 12, 1904, *p.* 270).—**H. Bruning** discusses the best means of confining the hands of young infants suffering from this condition so as effectually to prevent scratching of the affected parts. The arms may be bandaged to the sides of the body, or the hands be tied to the bedstead, but this tends to interfere with the freedom of the movements and to produce a sense of restraint which annoys and worries the patient. Or a cardboard or other splint may be fastened round the arm in such a manner as to fix the elbow. By this means, however, flexion of the shoulder-joints is not prevented, and the child may often be seen to utilise its arm in rubbing the itching areas. The writer suggests a simple appliance which appears to overcome every difficulty. A splint is applied to each arm in the form of a long cuff which produces fixation of the elbow-joints; a piece of tape attached to the upper ends of the cuffs passes across the nape of the neck behind, and serves to hold them up. Next a linen belt is applied to the lower part of the body at the level of the anterior superior spines of the ilia. To this belt are fixed two tapes, one on either side of the body, reaching upwards to the cuffs, to the middle of which they are attached. These tapes may bear a buckle like suspenders, in order that they may be shortened or lengthened at will. They are adjusted in such a fashion as to permit free movement of the upper limbs whilst not allowing these to be brought up to the level of the head or face. By this means considerable freedom of movement remains to the patient, with no risk of damage by scratching. E. P. BAUMANN.

Post-diphtheritic nephritis (*'Münch. Med. Woch.,' November* 15, 1904, *p.* 2042).—**A. Mayer** records a case illustrative of this rare condition. Whilst it is by no means uncommon for nephritis to occur as a sequela to scarlet fever, the renal complications of diphtheria tend to occur during the height of the attack, and very few cases have been recorded in which nephritis has formed a true sequela. In the author's case the renal complication occurred on the thirteenth day, after the throat condition had fully subsided. The original attack was very slight, but the author points out that it is these mild attacks that are especially liable to be characterised by sequelæ. No post-mortem examination in a case of post-diphtheritic paralysis has ever been recorded, and the exact pathological changes are, therefore, merely a matter of surmise. Zappart is of the opinion that the lesion consists of parenchymatous changes produced by the action of the toxin, and not of any action upon the vascular system such as occurs in cases of post-scarlatinal nephritis. E. P. BAUMANN.

Splenomegaly with cyanosis following jaundice (*'La Tribune Med.,' July*, 1904).—**L. Guinon, E. Rist,** and **L. G. Simon** showed before the Soc. Méd. des Hôpitaux a child, aged 10 years, who for several years had had considerable enlargement of the spleen, which appearance was preceded by a chronic jaundice, which still lasts. The liver was not enlarged. Polycythæmia was present, and was more marked when the jaundice increased. **Vaguez** ('La Presse Méd.,' July, 1904), having examined three cases similar to the above, finds the red corpuscles increased in number but not in size, thus differing from what occurs in cyanosis due to cardiac lesion. There is slight poikilocytosis without polychromatophilia. He suggests that the course of events is a myeloid anæmia with splenomegaly, the anæmia being due to an initial change in the bone-marrow, so that more white cells are formed which later become red corpuscles. The changes in the spleen are due to a change in the formation of white cells. J. PORTER PARKINSON.

Endocarditis following mumps (*'Wiener Med. Wochens.,'* 1904).—**R. Tatschner** relates the cases of four children, aged 9, 11, 7, and 5 years respectively, who, in November, 1903, had ordinary attacks of mumps which subsided in the ordinary way. Towards the end of January the eldest child suffered from acute coryza, pharyngitis, bronchitis, earache, and occasional evening rise of temperature. In March this child developed a musical systolic murmur, which subsided in a fortnight, but in April, on standing or walking, a loud ringing sound was heard synchronous with the unaltered first sound, and the pulse was 100 to 120 in the erect posture. This remained unchanged three months later. The child, aged 9 years, was found to have an apical systolic murmur at the end of January, and there was some increase of the cardiac dulness and slight pericardial friction. These signs disappeared in March. The other two children had also signs of endocarditis. The writer attributed these signs to endocarditis following mumps, as in all the children the hearts had been previously examined and found healthy, and the illness marked by coryza could not be the cause, as only one child suffered from it. These cases are remarkable, as endocarditis is one of the rarest complications of mumps. J. PORTER PARKINSON.

The rachitic hand (*'Archives of Pediatrics,' October*, 1904, *p.* 770).—**H. Koplik** describes a condition of the hand as peculiar to rickets and liable to be mistaken for syphilis. In most of the cases the rachitic state is very pronounced. The middle of the diaphyses of the phalanges of the hands is bowed and thickened. In consequence of this the fingers have a peculiar conformation. They may also be longer and more tapering than usual, from laxity of ligaments of the joints. EDMUND CAUTLEY.

Notes on ninety-five cases of syphilis in children (*'Revue d'Hygiène et des Medecine Infantiles,'* tome ii, No. 1, 1903).—**Fruhinsholz.**—The cases fall into two great groups: (*a*) Hereditary syphilis; (*b*) Acquired syphilis.

(*a*) For convenience, hereditary syphilis is divided into three classes: (1) That appearing during first year of life, 54 cases; (2) that appearing during second year of life, 11 cases; (3) That appearing between ages of 3 and 12 years, 19 cases.

(1) *First year.*—Of the 54 first year cases, 40 occurred during the first six months of life, 14 during the second. Incidence greatest during first month. The later the appearance the more benign the form. Contrary to generally received ideas, quite half the infants seen were quite up to the normal standard as regards appearance. Syphilis is described according to its effects on: (*a*) skin and mucous membranes, (*b*) bony tissues, (*c*) general condition; (*d*) nervous system; remembering, however, that these lesions may co-exist. (*a*) A skin or mucous membrane lesion is the most common herald of syphilis. The diffuse eruptions have a very sudden onset, the whole body becoming forthwith covered, but no fever is present. *Diffuse cases* (18)—The facies is characteristic, either pale or yellowish. The skin around the orifices brownish, and forming plaques of various colours, the nose obstructed with yellowish blood-stained crusts, the lips surrounded with plaques and fissures radiating from their corners. The adjacent mucous membranes are beset with opaline plaques. The forehead is rough, covered with fatty crusts and various syphilides. Such an appearance is absolutely diagnostic. The trunk is covered with macular or papular syphilides; the palms of the hands and soles of the feet are desquamating. Around the anus and about the genital region are generally papular or acneform lesions. Among the diffuse lesions were two cases of pemphigus in infants aged 3 and 6 weeks. Both had bullæ on the palms of the hands and soles of the feet, together with other marks of hereditary syphilis. *Localised or discrete lesions* (24 cases) may occur as fissures at the angles of the lips, around the nostrils as crusts, and at the free borders of the eyelids. Also the varnished appearance of the soles of the feet and the palms of the hands and the anal mucous membrane is very characteristic. Such lesions are usually benign. Gummatous skin lesions occurred in three cases. (*b*) *Bony lesions* occurred in 14 cases: 3 parasyphilitic, 9 syphilitic, and 2 combining

the former. In one case of hereditary syphilis the rachitic lesions were so marked that hydrocephalus was diagnosed, owing to the enlarged bosses. This child had been exclusively breast-fed. Four cases of spontaneous fractures of gummatous origin, with co-existing rickets. (*c*) *Lesions of the central nervous system* (2 cases)—Hydrocephalus seems the only lesion manifested in the first year. The other manifestations of syphilis may culminate in this, in spite of mercurial treatment. (*d*) General cachexia may be the only manifestations of syphilis (4 cases). Rarer manifestations of the first year—Enlarged abdomen with collateral circulation (4 cases); hypertrophy of the spleen (1 case); general adenitis (1 case).

(2) *Hereditary syphilis of the second year.*—This differs from that of the first year in that the lesions appear under more variable forms, and are at the same time more localised and more benign. In 11 cases there were skin troubles in 5 patients; nervous troubles, 5 cases; arrested development, 2 cases; osseous lesions, 1 case. Three of the nervous lesions consisted of hemiplegia. There was one case of double optic neuritis, cured by specific treatment. *Cutaneous lesions*—The lesions, which were generally local, were most commonly in the anal region. In two of the cases there were also fissures about the lips. In one case only was there a co-existent rash on the back.

(3) *Hereditary syphilis from* 3 *to* 12 *years.*—Six cases at 3 years, one at 4 years, one at 5 years, one at 6 years, two at 7 years, one at 8 years, one at 9 years, four at 10 years, two at 12 years. Of the 19 cases, bones affected, 9 cases; skin affected, 6 cases; nerves affected, 6 cases; mucous membranes attacked, 4 cases; glands involved, 4 cases; eyes affected, 4 cases; ears attacked, 2 cases. *Nervous cases* (6)—One thrombosis and arteritis of the cerebral vessels and another syphilitic meningitis with double ptosis and nystagmus, cured by mercurial inunctions; 1 case of epilepsy, patient showing the bony lesions of hereditary syphilis; 3 cases of paralysis, all accompanied with dementia. *Bony manifestations* (9)—Six lesions of periosteum had the bony exostosis; tibia most commonly affected; 3 dental lesions; typical Hutchinson's teeth never found. *Cutaneous cases* (6)—The older the child the rarer the cutaneous lesions, and the milder. However, the mild cases are often very little amenable to treatment. *Mucous lesions* (4)—Tongue 2, palate and larynx each 1. In one case arrested development was very marked, the child at 4 years neither talking, walking, nor hearing; teeth delayed and irregular; some nails wanting.

Pathology.—Since there were no deaths among children aged 2 years the cases are divided into (1) those of 1st year, and (2) those between 3 and 12 years.

(1) *Notes on* 33 *autopsies* show: Liver affected, 22 times; brain affected, 2; spleen involved, 17; brain and meninges attacked, 1; kidneys affected, 6; bones involved, 5; meninges attacked, 6; lung affected, 1. The *liver* is generally hypertrophied, pale, hard, or leathery. Gummata in 2 cases; ascites in 2 cases; in 1 case atrophy. *Spleen* generally hypertrophied and hard, in 1 case gummata. *Kidneys.*—Little macroscopic change. Microscopically, 1 case of venous thrombosis, 1 case of diffuse renal sclerosis and amyloid degeneration, 1 case of gummata, 1 case of diffuse sclerosis. *Meningeal changes* (6)—Generally discrete lesions, which take the form either of small peri-arterial gummata or of infiltration of the meninges. One case of hydrocephalus. A case characterised by syphilitic bony lesions showed on microscopic examination commencing rachitic changes in the epiphyses.

(2) *Pathology of hereditary syphilis* (from 3 to 12 years) in 5 autopsies:

3 cases of general paralysis; 1 case of syphilitic arteritis of cerebral vessels, 1 case died of pneumococcal infection. Nervous changes were present 3 times; localised arterial changes were found 3 times; renal changes occurred in 2, and bony changes in 2 cases. The heart, bones, muscles, nerves, spleen, and liver were each affected once.

Mortality of syphilitic children.—Among 84 patients there were 42 deaths; 37 died during the first year; others at 5, 9, 10, 12, and 13 years. The percentage mortality was, for the first year, 58·5; the second year, 0; and from 3 to 12 years, 26. Further investigation shows that the mortality was greatest during the first two months of life. Comparative evidence points to this being due to the greater virulence of the syphilitic poison. Broncho-pneumonia is specially fatal to syphilitic children.

Infantile mortality in the families of hereditary syphilitics.—In 67 families there were 266 pregnancies; these resulted in 142 living children, 76 deaths in infancy, and 48 miscarriages. Thus 124 lives were lost. Taking at haphazard the result of 266 non-syphilitic pregnancies, we find 190 living children, 62 infantile deaths, 14 miscarriages. Thus 76 lives were lost. Taking families where syphilis was most virulent, there were 52 deaths among 71 children.

(*b*) *Acquired syphilis* (12 cases): origin only found in 7; 1 case acquired by vaccination. In 8 cases, where the original lesion could be identified, 6 were extra-genital. Acquired syphilis presents the same features in the child as in the adult. Acquired syphilis is said to be benign in children. Two cases at the Polyclinique Rothschild were, however, of extreme virulence.

A. Barnard.

Prognosis in chronic nephritis of children (*Thèse de Paris*, 1904; *Arch. Gén. de Méd., August* 30, 1904, *vol.* cxciv, *p.* 2225).—**J. Maillard** discusses at length this subject and thinks that the prognosis is better than in adults. He records four cases and refers to three others in which there occurred a perfect cure, as evidenced by disappearance of albuminuria, normally constituted urine, absence of cardiac hypertrophy, these all being observed for some years. He deprecates a prolonged milk *régime* in the treatment, and also surgical interference, advocating chiefly the dechlorated diet treatment.

A. Ernest Jones.

Blood diseases of infancy and childhood (*'Lancet,' December* 3, 1904).—**Batty Shaw** arrives at some conclusions. There are, he states, no sharp lines of demarcation between the various groups of anæmia occurring in infancy and childhood. We do not yet know the exact state of the spleen, lymphatic glands, and marrow in these diseases, except in the case of leucocythæmia; and, moreover, clinical evidence fails to separate these disorders. There are many transitional forms between pernicious anæmia and leucocythæmia. There is no doubt as to the importance of a study of lymphoid tissue, and more especially of the nature of the cellular elements. The marrow is involved in every case of leucocythæmia, and shows a hyperplasia of the lymphoid cells which normally occurs there. These mother-cells develop into non-granular lymphocytes, granulocytes of all kinds, or into both non-granular and granular cells. The spleen and lymphatic glands may or may not share in this change. In other cases (pernicious anæmia) the lymphoid cells appear to give rise to various forms of erythroblasts and erythrocytes. This hyperplasia, as it is termed, is much more active in young subjects than in adults, though the exact nature of the agents which produce it are still unknown. It is more in harmony with recent investigations to insist upon the close relationship of all blood diseases, rather than to attempt to separate them at the bedside into sharply defined groups. Pathological considerations do not at present justify the recognition as separate diseases of what are really merely different degrees of reaction of the blood-forming tissues to various excitants the nature of which is at present obscure. James Burnet (Edinburgh).

A case of non-eruptive measles ('*Lancet*,' *December* 10, 1904). **J. D. Rolleston** records a case of what is known in medical literature as *morbilli sine morbillis*. The patient was a girl, aged 5 years, who was suffering from an attack of scarlet fever. The case progressed favourably and desquamation occurred in due course. After some days the temperature suddenly rose. Next day she vomited, an erythema appeared on the body, while the fauces and soft palate were injected. The temperature rose to 102° F., and during the night she coughed several times. Next day the rash had faded, but the temperature persisted. Two days later the mucous membrane of the cheek was injected, and showed three definite Koplik's spots. An urticarial wheal was seen close to the umbilicus; and at night a number more appeared on the trunk, while the cough became troublesome; there was profuse coryza and there were now signs of bronchitis present. On the following day the urticaria and Koplik's spots had disappeared. The coryza and bronchitis persisted for three days longer, when the temperature finally settled. No desquamation followed, and the child made a good recovery. There was a history of measles about fifteen months previously, when three other members of the same family were affected. The rash, catarrhal symptoms, and constitutional disturbance were, however, more marked in this patient than in any of the other children. In the present instance the diagnosis was based on the occurrence of several other cases of measles in the same ward, and the presence of catarrhal symptoms, pyrexia, Koplik's spots, and the prodromal, erythematous, and urticarial eruptions.
James Burnet (Edinburgh).

Tuberculosis in children ('*Pediatrics*,' 1904, *vol.* xvi, *p.* 536).—**R. H. Babcock,** of Chicago, makes some remarks on tuberculosis in children. He quotes statistical evidence showing that it is present in about 23 per cent. of autopsies on children under ten years of age. Northrup found it in 14 per cent. of 248 autopsies at the New York Foundling Hospital. Generally, the primary seat is in the bones, joints and lymph glands (Jacobi). The lungs are eventually involved. Holt found them affected in 117 out of 119 autopsies, secondary to disease of the bronchial glands. In infants the symptoms are chiefly those of marasmus, so the disease may be overlooked. The liability to miliary tuberculosis is very great, and the lung signs simulate bronchitis or broncho-pneumonia. Under the age of five years the bronchial glands are the chief seat, and, according to Fraenkel, the earliest affected. From these the disease spreads to the middle portion of the lung and the lower lobes. Sometimes extension is due to penetration of a bronchus by a caseous gland. In examining a child for suspected tuberculosis special attention must be devoted to the bronchial gland area, between the second and fifth dorsal spines, to the right middle lobe, to the middle portion of the left lung, and to both lower lobes. Apical dulness, even when persistent, is often due to old broncho-pneumonia, and not to tuberculous mischief. Look also for evidence of enlarged cervical and mediastinal glands. The latter may give rise to physical signs of pressure on a bronchus.

EDMUND CAUTLEY.

Pathology.

Total absence of umbilical cord in a fœtus of 5½ months (*'Lyon Medical,' December*, 1904).—**Dr. Planchu** showed this fœtus, the mother being a multipara having previously had a normal pregnancy and parturition at term of a living and healthy infant. The second pregnancy, during which she had an attack of acute gonorrhœa, was interrupted towards the middle of the sixth month by the death of the fœtus, which was expelled ten to twelve days later without hæmorrhage or sepsis. There was no umbilical cord; at the level of the umbilical region there was an elongation 4 centimetres long and 3 centimetres thick entirely covered by a cutaneous investment, and which consisted of a large umbilical hernia in which was lodged a large part of the intestines. This hernia was attached exteriorly to the placental margin, from which it was only separated by the thickness of the membranes. The relation of this interfœto-placental pedicle was entirely confined to the loops of intestine, and there was no structure analogous to a vascular cord surrounded by Warton's jelly and amniotic sheath. Only the naked and more or less separated umbilical vessels extended over the lower border of the hernia and then ramified over the fœtal surface of the placenta, on which there was no semblance of any funicular insertion. VINCENT DICKINSON.

A case of angina "tetragenosa" (*'Gaz. Med. de Nantes')*.—**Monnier** describes a case in a girl, aged 2 years, who was brought to hospital for a sore throat, which proved on examination to resemble diphtheria so closely that the antitoxin was injected. The next day the inflamed tonsils were seen to be covered with a large number of little blue points like grains of sand. The bacteriological examination showed the presence of the micrococcus tetragenus aureus. There was no fever and the glands were not enlarged. DAN MCKENZIE.

Tuberculous ulcers of the gums (*'Medycyna,' No.* 6, 1904).—**Hertz**, in a boy aged 16 years, who was complaining of pain and bleeding from the gums lasting three months, observed upon the inner surface of the alveolar mucous membrane of the upper jaw an ulcer which extended from the last right molar round to the first left molar, and on the lower jaw a small ulcer in the neighbourhood of the last molar. The external surface of the upper gum was swollen and bled on being touched. In addition to these the writer found small ulcers on the palate and on the ala of the right nostril. The tubercle bacillus was found lying in the ulcers. DAN MCKENZIE.

Idiopathic dilatation and hypertrophy of the colon—"Hirschsprung's disease" (*'Prager Medizinische Wochenschrift,' November*, 1904, *p.* 607).—**Gregor Gourévitch** describes the large intestine of a child, aged 16 months, who had died from chronic constipation. The patient was brought to the hospital when a year old because his abdomen, which his mother had noticed was abnormally large from birth, had become distended. The bowels had never acted normally; enemata had been given regularly.

The head and chest showed undoubted signs of rickets. The abdomen was enormously distended; the girth 4 cm. above the umbilicus was 63 cm. and the measurement from xyphoid process to navel 18 cm. and from navel to symphysis pubis 14 cm. The veins of the abdominal wall were dilated, the abdomen elastic and tympanitic. Hard scybala were felt in the rectum. Constipation persisted in spite of treatment, and laparotomy was performed to see whether it was possible to remove any cause of obstruction. A lesion was not found; scybala were removed from the sigmoid and the bowel was sewn to the abdominal wall in order to permit of an artificial anus being established if deemed necessary. The constipation was not relieved, and later the bowel was opened. Vomiting ensued and the child died. At the autopsy the sigmoid and rectum were found to be almost normal, whilst the lower part of the ileum and the colon were distended and the muscular walls greatly hypertrophied. Microscopic examination showed that the muscular layers of the wall of the colon were four times the thickness of that of the sigmoid. Gourévitch regrets that there is no record of the length and form of the meso-colon from the specimen which forms the subject of his paper, for he thinks that careful observation of that structure would lead to the solution of the problem as to whether the disease is a congenital defect or caused by temporary kinking of the bowel. OTTO GRÜNBAUM.

A case of congenital dilatation of the colon (*'Reports of the Society for the Study of Disease in Children,' vol.* IV, *pp.* 297–304, *May,* 1904).—**George Carpenter** describes a case in a child aged 5½ years, whose belly was noticed to be large during the first year of its life, and whose bowels "were never opened without aperients." The patient was a thin but not anæmic child. His abdomen measured 27 inches in circumference; it was distended with gas, and vermicular movements of the intestines of no definite direction were plainly visible. He was admitted into hospital, and while there developed measles. During the attack his belly became more tense and distended; it measured 31¾ inches, and the skin over it was shiny. Turpentine enemata brought about an evacuation of the bowels and a decrease in girth by 2¾ inches, and a still further decrease was subsequently obtained by the same means. An inguinal colotomy was performed by Mr. Douglas Drew. During the operation the peristaltic contraction of the gut was very strong and made stitching difficult, but the bowel was finally brought into the wound and anchored there: it was not opened. He died suddenly five days afterwards. Post-mortem all the stitches had cut out, and there were signs of acute peritonitis on opening the abdomen. The whole of the large gut was enormously hypertrophied and distended, but the thickness of the muscular wall seemed to increase as one descended; the size of the bowel was about the same until its passage through the pelvic floor. There was no evidence of any narrowing, or of anything pressing on the gut. The small intestine appeared to be somewhat enlarged. The stomach was enormously distended. Dr. Sydney Curl made the microscopical examinations. The mucous membrane of the large bowel, which showed absence of superficial epithelium, was of a chocolate colour, due to blood pigment deposited in the mucous membrane. There was enormous hypertrophy of the circular and longitudinal muscular fibres; this was not so marked in the muscularis mucosæ, but it was very obvious. There was increased vascularity of the submucous tissue. The small intestine was considerably dilated; the circular muscular fibres appeared to be slightly thickened. The stomach was very large; its circular muscular fibres were thickened. In both the superficial epithelium was denuded, and in all instances this was possibly a post-mortem change George Carpenter regrets that the oesophagus was not removed for examination, as it likewise might have shown some anatomical changes. He comments on the absence of anæmia and auto-intoxiation, and he contrasts the case with one recorded by **C. N. Gwynne** in a child aged 6½ years (*'Reports of the Society for the Study of Disease in Children,' vol.* ii, *pp.* 129-133), who displayed mental hebetude and lay like a log in the bed. Gwynne performed an abdominal section, which showed that general chronic peritonitis was present as well as an enormous distension of the colon from the cæcum to the rectum. The wound was closed, and an artificial anus was made in the left iliac region, where the bowel was firmly bound down by adhesions. A year later the abdomen was nearly, if not quite, normal in appearance; the motions though still irregular and at times constipated, came *per vias naturales*. The artificial anus was practically closed. The general health of the boy was excellent, and his body was well nourished. Comparison is also made with that of a child aged 3 years, reported by **F. Valagussa** (*'Riv. di Clin. Ped.,' December*, 1903), who was comatose and suffered from nocturnal convulsions. The cause for the uniform distribution of altered blood-pigment in the mucous membrane of the colon was due, Carpenter thought, to mechanical congestion and the general condition he regarded as an example of congenital malformation. JEAN FERRAS (Luchon)

Precocious lactation in a male infant (*'Lancet,' January* 7, 1905).—**Montague Murray** records an interesting case of this condition in an infant aged 3½ months. Both breasts were the size of half a billiard ball, the areolæ were prominent and well marked, while the nipples were also proportionately enlarged. A fluid resembling milk oozed from both nipples. The patient was breast-fed, and in size that of a ten or twelve months old infant. The penis and testicles were above the average size. There was no pain or tenderness present. The patient died three weeks later, the breasts continuing to increase in size and to secrete. At the necropsy a congenital heart condition was found. The mammary glands were healthy and actively secreting. There was no evidence of inflammation. The secretion was found to resemble milk, except that there were fewer fat cells and it contained a few colostrum corpuscles. JAMES BURNET (Edinburgh).

Morphological changes in the long bones of children (*'Wratschibnaja Gazette,' July*, 1904; *'Allgem. Wien. Med. Zeit.,'* 1904, *No.* 36, *p.* 395).—**A. J. Grekow** has examined microscopically sections of the diaphyses of the femora of twenty-six bodies of children ranging in age from 1 day to 12 years. He finds that during the first two years of life the bone is very rich in blood-vessels and in marrow elements, whilst the inner or osteogenetic layer of the periosteum is especially well developed. During the first four months the most noticeable feature is the disposition of new bone by the periosteum accompanied by the absorption of previously formed bone in the central canal. From the fourth to the ninth month growth takes place in the deeper layers of the compact bone rather than in the subperiosteal layers; from the ninth to the twenty-fourth month the process of subperiosteal bone formation preponderates; during the second and fourth years the process of periosteal bone-formation and central absorption gradually diminishes, the bone losing its marrow and vascular elements and the periosteum its cellular elements. At this stage the formation of the bone resembles that of an adult, and by the twelfth year no difference is discernible. The writer believes that the frequency of the occurrence of osteomyelitis in children of under 3 years is referable to the richness of the bone at this period in vascular and cellular elements. E. P. Baumann.

Therapeutics.

The intra-uterine treatment of suspected congenital goitre ('*Med. Correspondenzbl. d. Wurttemb. aerztl. Landesvereins*,' 23, 1904).—**Schmid** describes cases which may not be absolutely convincing to the logical mind, but the therapeutic suggestion is worthy of record and note. A patient of his, a goitrous woman, who lived in a typically goitrous district, gave birth to a child with an enlarged thyroid. This child, which received no medical attention, died, it is supposed, as a result of the goitre, in three days. Her second child was also goitrous, and died thirty-six hours after birth in consequence, as the post-mortem showed, of asphyxia produced by the pressure of the hypertrophied thyroid upon the trachea. During the third pregnancy Schmid submitted the mother to a course of treatment by thyroid tablets from the fifth month onward, and the infant, born at full time, was well nourished, and showed no trace of thyroidal enlargement. Congenital goitre is by no means an uncommon occurrence in goitrous districts of the British Isles, as the records which appear from time to time in the journals tell us.

Dan McKenzie.

The prophylaxis and treatment of thrush ('*Riv. di Clin. Ped.*,' *September*, 1904).—**F. Pagliari** describes three varieties: (1) mild sporadic, (2) severe sporadic, (3) endemio-epidemic, the two latter resisting the ordinary remedies in vogue, and the last proving frequently fatal. On this account he advocates treatment by solution of silver nitrate, 1 to 3 per cent., which compares thus favourably—Firstly, frequency of cases: period previous to use of silver nitrate in the Provincial Asylum at Rome, 9·46 per cent.; after its use, 5·50 per cent. Secondly, mortality: period previous to use (treatment with 1 per cent. sol. potash permanganate) 31·68 per cent.; with silver nitrate, 2·98 per cent. A solution of 1 per cent. was painted on the buccal mucous membrane every day as a prophylactic, and a solution of 3 per cent. with 20 per cent. glycerine as a curative.

Vincent Dickinson.

Lecithin in infantile therapeutics ('*La Pédiat.*,' *October*, 1904).—**A. Migliaccio** gives his experience with this drug at the children's clinic at the University of Naples. In cases of anæmia, atrophy, and rickets he used intra-muscular injections of 30 centigrammes of lecithin, made into an emulsion with normal saline solution, every other day. He noticed a rapid, and sometimes marked, increase of body weight, an increase of hæmoglobin averaging 10 per cent., increase in number of red corpuscles. The phosphates in the urine were increased. He considers that lecithin has these advantages in the treatment of rickets: that the phosphorus, the real curative agent, is administered as an organic compound, the only product that the organism can benefit by that; rickets being dependent on gastro-intestinal disturbances, lecithin acts by improving the condition of the digestive system, and thus removing the principal cause that disturbs the normal process of ossification;

that no intolerance takes place which may lead to suspension of the cure, as often happens when phosphorus is given in the form of phosphorated cod-liver oil.

Vincent Dickinson.

The therapeutics of phytin ('*Centralbl. f. Kinderheilk.,*' *November* 1, 1904, *p.* 410).—**Fürst** records the results of a number of observations upon the use of this drug. Phytin is a preparation of vegetable phosphorous obtained from plants. It contains 22·8 per cent. of the metal in an organic form. It may be used either in its original form or as a lozenge (known as fortossam), in which it is made up with sugar of milk. It is best administered in the latter form to children under two years of age. The drug is readily assimilated, and does not tend to produce any gastro-intestinal disturbances. The writer has found it of special value in rickets, for convalescent patients of every kind, and in cases of brain-fag, and neurasthenia. The dose of phytin ranges from 5 to 15 grs. for children of two to six years, or 10 to 20 grs. for children of six to ten years. In infancy a fortossam lozenge may be given in milk three to four times daily before meals.

E. P. Baumann.

Otology, Laryngology and Rhinology.

Aphthous laryngitis ('*Wien. Klin. Wochenschr.,*' *No.* 5, 1904).—**K. Zuppinger** has found six cases of aphthous stomatitis, in which the laryngeal mucous membrane also showed aphthous patches. Bacteriological examination proved the absence of the diphtheria bacillus. Treatment was directed chiefly to the oral condition, while at the same time inhalations of steam and warm fomentations to the neck were resorted to.

Dan McKenzie.

Empyema of the maxillary antrum in childhood ('*These de doctorat,*' *Bordeaux,* 1903).—**Bourraque** thinks that maxillary sinusitis is generally secondary to some nasal infection. In quite young children the disease may take on a very acute form. As a method of diagnosis transillumination is not to be relied upon at an early age. With regard to the treatment, the writer warns us against the usual surgical measures, because if the antrum were entered through the canine fossa the second dentition would probably be interfered with. He relies upon cleansing and antiseptic methods.

Dan McKenzie.

An unusual case of double retropharyngeal abscess ('*Sezione Toscana della Societa Italiana di Pedriatria,*' *June* 23, 1903).—**Giuseppe Caccia** narrated the case of a child aged 2 years, who was brought into hospital with violent dyspnœa. Twenty days before admission he had been attacked by scarlet fever with enlarged glands under and behind the jaw. On admission a right-sided retropharyngeal abscess was diagnosed and incised, a large quantity of pus being evacuated. In spite of this the impediment to the breathing persisted, and after repeated examination, a considerable swelling in the middle line of the naso-pharynx was discovered, very hard in consistence, and blocking the entrance to the larynx in such a manner that tracheotomy had to be performed. Two days after, the swelling had become so soft that it was possible to open it. Immediate relief of all the symptoms followed.

Dan McKenzie.

The relief of nasal dyspnoea in infants (*'New York Medical News,' June* 6, 1903). **Northrup.** In a case reported by this writer there was extreme dyspnœa resulting from acute swelling of the tonsils and in the naso-pharynx, so that it was at one time supposed that tracheotomy would be necessary. By the insertion of a rubber drainage tube into each nostril, however, the child obtained immediate relief and at once fell asleep. The first attempt to remove the tubes, twenty-four hours after their insertion, was found to be impracticable, but ultimately they were removed and the child recovered. As is well known, conditions which produce obstruction to the free passage of air through the nostrils of new-born or very young infants are liable on this account to be the cause of an amount of respiratory distress which older children who have acquired the art of breathing through the mouth do not experience. One not infrequently sees a child's rest completely disturbed and the patient worn out by efforts to breathe through nostrils which have become blocked from some simple catarrhal swelling of the mucous membrane, for new-born children do not breathe through the mouth at all save when crying. Under these circumstances relief may often be obtained by allowing a few drops of oil to trickle into the nostrils or by anointing the inside of the nose with a weak solution of menthol in liquid paraffin. Failing this the plan adopted by Northrup might be tried.

Dan McKenzie.

Papillomata of the larynx in a infant (*'Archives of Pediatrics,' November*, 1904, *p.* 840).—**T. J. Elterich** reports a case in a boy, aged 2 years. Attacks of dyspnœa and hoarseness began in the eighth month. The dyspnœa lasted eight to ten days, and gradually subsided. The attacks recurred with increasing severity every six to eight weeks. Complete aphonia soon developed and persisted until death. During the attacks of dyspnœa the expression became anxious; the face, lips, and finger-tips cyanotic; respiration stridulous and much accelerated, with costal and sternal recussion; pulse 140. For some months there were no severe attacks. A week after the onset of a bad attack of varicella, the symptoms of stenosis became so severe that arrangements were made for operation, but the child died of asphyxia before it could be performed. The aperture of the larynx was almost entirely occluded by a mass of papillomatous growth and the lumen would only admit a probe. The vocal cords were almost obliterated. Some of the growths were situated on the epiglottis and trachea. All types of papillomata were present.

Edmund Cautley.

Acute Otitis (*'Archives of Pediatrics,' October*, 1904, *p.* 743).—**C. G. Kerby,** of New York, records his observations on 51 cases treated by operation. Of these 16 were under 1 year, 17 were 13 to 30 months old, 12 aged 3 to 6 years, and 6 between 8 and 14 years. In 28 the disease was bilateral. In 3 cases the disease was primary. The causes in 48 were: German measles, 1; scarlet fever, 2; measles, 7; catarrhal colds, 38. Pus was found in the middle ear in 48, and serum in 3, streptococci alone in 13, staphylococci alone in 11, pneumococci in 2, and combinations of these in the remainder, excepting 4, which were not examined. Pain and localised signs were present in one third only of the cases. In 4 the mastoid and in 3 the jugular bulb became involved; the rest were uncomplicated. The mastoid cases made good recoveries. In 33 of the uncomplicated cases the discharge ceased, and the drum closed in 13 to 14 days, in 7 cases, from 14 to 21 days. After paracentesis the ear was syringed with eight ounces of 1 : 10,000 bichloride every three hours for 24 hours or 48 hours, and then according to the progress of the case. Kerby notes that the physical condition of the child appeared to exercise no influence on the susceptibility. Two thirds of the children were strong and well-nourished. In none were the tonsils sufficiently large to require removal. In six cases there was sufficient nasal obstruction to suggest the presence of adenoids. The fact that in 72 per cent. the cause was a so-called catarrhal cold emphasises the importance of being on the look-out for this complication, particularly if there is a rise of temperature. Another striking feature is the absence of pain and localising symptoms in two thirds of the cases. In such instances the affection may not even be suspected. In the mastoid and sinus cases the children did not appear very ill. When the temperature was low they sat up and played and were fairly bright. For this reason it was difficult to make parents realise the necessity for operative treatment. Without such treatment pyaemia soon occurs. EDMUND CAUTLEY.

Surgery.

The treatment of pyloric obstruction in infancy ('*Centralblatt für Kinderheilkunde,*' *December* 1, 1904, *p.* 451).—**Felix Franke** records a case of successful gastro-enterostomy for pyloric obstruction in an infant aged 6 weeks. The child was breast-fed and of healthy parents. Constipation was the only symptom of disease during the first three weeks, then vomiting began and became more and more frequent in spite of all modification of diet. Bile was never present in the vomit. The faeces became darker. Urine was normal but small in amount. The child was very emaciated; the upper part of the abdomen was distended whilst the lower retracted. Well-marked peristalsis, passing from left to right, made itself evident through the abdominal wall. The pylorus could not be felt. Gastro-enterostomy was performed with the most satisfactory result. The child gained 550 grammes in twenty days, and was free from gastric trouble during the next three years. Franke discusses the treatment of pyloric obstruction and comes to the conclusion that even if the disease be due to pyloric spasm if it do not rapidly respond to treatment it is wise to operate lest the child be reduced to a condition which greatly increases the risk of operation. The treatment consists in giving very small quantities at a time of a food which has been made alkaline in order to counteract any possible hyperchlorhydria, the application of hot fomentations to the abdominal wall, and if necessary small doses of opium. The author points out, however, that Seefisch found that in three cases which responded to this treatment operation became necessary before the children reached the age of 12 years. In discussing the operative procedure he states that stretching the pylorus is the most satisfactory because it is by far the least formidable operation. When stretching is not possible pyloroplasty should be performed provided that the hypertrophy be not too great to preclude it. Some number of cases can only be alleviated by gastro-enterostomy. The results he has been able to collect from the literature are:

	Recoveries.	Deaths.
Pyloric stretching	13	3
Pyloroplasty	2	1
Gastro-enterostomy	7	9

The high mortality of gastro-enterostomy may be assigned to the desperate condition of many of the cases operated upon, and possibly occasionally to the technique of the surgeon not being absolutely faultless.

Otto Grünbaum.

Ophthalmology.

Bilateral glioma of the retina (*'Montreal Med. Journ.,'* 1904, *vol.* XXXIII, *p.* 857).—**G. H. Mathewson** and **F. J. Ross** report a case in a girl, aged 2 months. The right pupil had a peculiar yellowish-white colour, due to tumour occupying about two thirds of the temporal half of the eyeball. A smaller tumour was found in the temporal half of the left eyeball. The pupils were of medium size. There was little increase in tension. The peculiar reflex in the right eye had been noted by the mother when the child was 5 weeks old. Five weeks after being seen the right eye was in a condition of acute glaucoma, eyelids red and swollen, conjunctiva œdematous, and the cornea opaque. In the left eye the tension was raised and the white reflex more noticeable. There is still considerable controversy as to the nature and origin of these growths. Von Graefe states that they are composed of hyperplastic neuroglia cells, with a few ganglion cells and nerve-fibres. Intra-ocular glioma always arises from the retina, usually from the granular layer. In the first stage a small white spot is seen in the retina. In the second stage a yellowish-white papillary reflex is present, due to a tumour in the depth of the eye. Tension is generally raised and the pupil dilated. In the third stage we get glaucoma, a dull and steamy cornea, congestion of the sclera and conjunctiva, and swelling of the lids. In the fourth stage the tumour breaks through the eyeball, grows extra-ocularly, and may invade neighbouring organs. Metastases may occur. **Cautley** (*'Reports Soc. for Disease of Children,' vol.* IV, *p.* 277, 1904) showed a girl, aged 2 years, with multiple gliomata of the scalp. The right eye had been removed two months previously for glioma exophytum. The left eye exhibited a retinal growth in the third stage. Secondary growths developed in the groins shortly after and death occurred in four weeks. The prognosis is very bad. The writers state that death results in one to three years from exhaustion or invasion of vital organs. Recurrence after operation is very common. In 1886 only fifteen cases of permanent cure were on record. Most of the cases occur under 5 years of age. It is usually monocular. Congenital cases are generally bilateral and seem to be due to some defect of development.

Edmund Cautley.

Review of Books.

Traité d'Hygiène et de Pathologie du Nourrisson et des Enfants du Premier age. Publié sous la direction du Dr. Henri de Rothschild, de Paris. Tome deuxième, Paris, 1905. Octave Doin, Place de l'Odéon, 8. Prix 15 francs.

About one third of the second volume of Rothschild's monumental work is occupied by Dr. A. Péchin's description of diseases and malformations of the eye as they occur in young children. The subject is not treated systematically; that is to say, no formal account is given of all the ocular diseases met with in children, but the author has provided us with a good account of those maladies which occur exclusively in children, or are much commoner among them than among older persons. Thus, Pechin pays much attention to ophthalmia neonatorum, persistent hyaloid artery, infantile cataract, congenital paralysis of the ocular muscles, buphthalmos, obstetrical lesions of the eye and its appendages, and congenital dacryocystitis. The volume is generously illustrated. The author shows a very considerable familiarity with the literature, especially with such as has been published in his own country.

The chapter upon that mysterious and serious complaint buphthalmos, or infantile glaucoma, may be briefly analysed, if only to afford readers a glimpse of how our author treats his subject. Pathological examinations of diseased eyes, he says, have so far failed to reveal the nature of the primordial lesion. According to Cross, who examined three eyes microscopically, adhesions are found between the root of the iris and the neighbouring parts, thus leading to an occlusion of the filtration angle. These findings lend support to the theory of E. T. Collins, according to whom buphthalmos is the outcome of a congenital malformation, interfering with the separation that should normally occur between the iris, on the one hand, and the posterior surface of the cornea on the other. Angelucci, on the contrary, believes that buphthalmos results from disturbance in the vasomotor mechanism. That author assumes a congenital lesion of the vessels, seated probably in the sympathetic. Intra-ocular vaso-dilatation and hypersecretion is in this way brought about. Angelucci's views appear to be supported by certain symptoms he has found in children suffering from buphthalmos, such as tachycardia, dilatation of the peripheral vessels of the face and head, cardio-vascular disturbances, increased arterial pressure, and so forth. Lodato found a noteworthy hyperæmia in the superior cervical ganglion on the affected side in a rabbit, which presented a unilateral buphthalmos of congenital origin. Priestley Smith and Pergens have maintained an excessive volume of the crystalline lens to be the cause of the buphthalmos. Hereditary syphilis has been blamed as the cause, on account of the corneal opacities associated with buphthalmos, but, according to Péchin, this etiology cannot be maintained.

Buphthalmos may affect one or both eyes. The diseased eye is enlarged in all its proportions owing to augmentation of the pressure upon its internal surface. The cornea may, or may not, be transparent, and, in the latter event, the aspect is reminiscent of that of interstitial keratitis. The opacity may disappear. The optic disc is pallid and often excavated. The crystalline lens may be smaller than usual, because its entire superficies is exposed to increased tension. Exceptionally, sight remains good. The disease may become arrested spontaneously, or may progress to complete blindness. Even in the former contingency there is reason for apprehending glaucomatous complications in later life. With regard to the treatment of this formidable disease, Dr. Péchin speaks in no uncertain voice. He advises the performance of an early iridectomy, or an equivalent operation, preceded by the use of myotics, such as pilocarpine or physostigmine.

Obstetrical lesions of the eye and its adnexa are scarcely mentioned in the ordinary text-books, either of ophthalmology or of midwifery. Dr. Péchin, however, devotes an entire chapter to the consideration of this somewhat important subject. These injuries (to which a good deal of attention has lately been paid in this country) may be due to the use of forceps, contracted pelvis, or to maladroit examinations on the part of the accoucheur. The eyelids, the eyebrows, and the orbit may each and all be injured by the blade of the forceps. Fractures of the orbit may be complicated with hæmorrhage and exophthalmos, and even with avulsion of the eyeball. The optic foramen may be fractured, an accident likely to entail atrophy of the optic nerve. The orbit may be emptied of its contents—eviscerated, so to speak—as the result of careless digital examination in a case where the face presents. Opacities of the cornea—miscalled "keratitis"—have been known to follow compression of the eyeball by the forceps. It is, nevertheless, a little curious that the most characteristic form of opacity, namely, one or more curvilinear stripes, is not mentioned by Péchin. Opacities of this type have been described by Sidler-Huguenin, W. E. Thomson, L. V. Cargill, Fejer, and Sydney Stephenson. Retinal hæmorrhages may complicate normal and, especially, abnormal labour. According to Péchin, they result either from diapedesis or from rupture of the vessels. An obstetrical strabismus is recognised by the author. Ocular paralysis may result from difficult labour. The third nerve may be partially affected, but no instance of complete paralysis of the oculo-motor nerve is known to Péchin. Paralysis of the sixth pair may occur alone, although it is often associated with paralysis of other ocular nerves. Injury to the facial nerve is generally due to compression by the forceps of the nervous trunk as it comes through the stylo-mastoid foramen; but it may also be due to compression of the face against the bones of the pelvis.

An interesting chapter is devoted to the subject of congenital paralysis of the eye-muscles. The condition is uncommon. Some fifty cases have been published of ophthalmoplegia externa, partial or complete, the "complex paralysis" of Cabannes. If such cases are rare, pathological examinations are rarer still. In some instances alcoholism, tuberculosis, malaria, syphilis, or consanguinity have been noted in the parents. An infection or an intoxication evolving during the intra-uterine period may be responsible. The influence of heredity is very pronounced in this condition, as witness a remarkable series of cases reported by Gourfein (*Arch. d'Ophtalmologie*, 1896, p. 721), where six persons belonging to three generations of one family were affected, viz. the paternal grandmother, the father, and four out of six children. The congenital absence of one or more of the ocular nerves has been assumed as the cause, but it is important to bear in mind that this theory is not based upon pathological investigations. A more probable theory assumes that the paralysis is due to an arrest of development or congenital malformation of the motor nuclei. Heubner's is the leading case, as the lawyers say, with regard to this hypothesis. Its facts are as follows: A child, aged 1 year, was affected with paralysis of both sixth and seventh cranial nerves, together with incomplete paralysis of the third nerve on the left side. There was, moreover, absence of the lacrymal secretion. The child died from pneumonia consecutive to measles. At the autopsy the spinal cord was found to be incompletely developed, and the bulb, along with the nuclei from the olivary body to the third pair, to be atrophied. There were no alterations, macroscopic or microscopic, in the brain. While the foregoing theory may be true in many instances, it must not be forgotten that in certain cases, such as those described by Steinheim and Heuch (spelled "Hench" in the original, by the way), the affected muscles have been found upon dissection to be absent or, if present, to be smaller than normal or to be inserted abnormally. The associations of congenital ophthalmoplegia may include facial or fifth nerve paralysis, flattening of the lower border of the orbit, epicanthus, nystagmus, downy hair on the eyelids, and many other congenital anomalies of the eyes or other parts of the body. SYDNEY STEPHENSON.

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Original Articles.

AN INTRODUCTION TO RESPIRATORY PEDIATRICS, OR THE CLINICAL CARE OF RESPIRATION IN INFANCY AND CHILDHOOD.

Two Lectures delivered at St. George's Hospital.

By William Ewart, M.D.Cantab., F.R.C.P.,
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Senior Physician to the Belgrave Hospital for Children.

Lecture I.—The Scope of Respiratory Pediatrics. The Respiratory Functions in Health.

I hardly need offer any apology for this title. "Pediatrics," a convenient substitute for the homely, much-condensed phrase "child doctoring," is just one of our medical words derived from Greek, a language a little out of favour for a while with the public, but never out of use with us. Much less need I excuse the selection of the subject ; for you have easy access to the returns of mortality, which show the prevalence of respiratory affections in early life ; and from your own experience as athletes you are fully aware of the value of respiratory efficiency, and of the frequency with which it is marred by the results of disease, or by deficient early training.

You are, therefore, good judges of the importance of these matters. Respiratory power is the measure of our physical activity. Athletic usefulness and success claim it as their necessary basis; and a great deal of wasted value of life and much physical, mental, and moral inferiority are due to the inefficiency of the "oxygen machine," and are often quite remediable when simply resulting from awkwardness in breathing. Some of you may have witnessed their cure, quite outside medical advice, by the trainer, the schoolmaster, or the professor of singing.

Respiratory pedriatrics include this schooling department, but a good deal more besides, namely, that department which is strictly clinical and accessible to the initiated only; and where skilled medical care is needed both for prevention and for cure. I believe that the more closely we look into the requirements ourselves, instead of delegating the work entirely to nurses and masseurs, the better it will be for our patients and for our own clinical usefulness.

The practical object of respiratory pediatrics is an improved knowledge (1) of the causes and mechanism of the various respiratory defects; (2) of the means of preventing the latter or the diseases which produce them; and (3) of the methods best calculated to cure or correct them.

Although a considerable instalment of this purpose has already been taken in hand and carried out with excellent results in connection with the prevalent adenoid affections of the upper respiratory tract, there remains a larger task more difficult, and hitherto less worked at, which I must now invite you to consider—the prevention and cure of the respiratory defects arising in infancy and childhood from thoracic and pulmonary disease.

The accomplishment of this task and of the clinical studies which I had sketched out for myself in connection with it is more than I can hope ever to carry out, and they must largely devolve upon yourselves among other workers. But I may carry you a first step towards their fulfilment by reviewing the principles and the fundamental facts which may furnish material for further study and some basis for treatment in connection with those diseases of the respiratory tract and bronchi, of the thorax, pleuræ, lungs, and mediastinal structures which commonly lead to respiratory defects.

The Prevalence of Respiratory Diseases in Infancy.

Infant life suffers most and earliest from gastro-intestinal affections; but the abdominal danger becomes less acute after the hecatombs of the first eighteen months. As the survivor grows to the age of standing, and begins to face the risks of locomotion, he runs the gauntlet of draught and disease, of ground germs and of dust, much of which goes through his mouth and respiratory passages, with the result that the second high mortality, that of earliest childhood, is due to affections of the respiratory system, including zymotics such as diphtheria, measles, or scarlet fever, with their fatal throat and lung complications, and also the arch-fiend whooping-cough, and the "civilisation" disease of infancy, rickets.

Fortunately in the larger non-fatal incidence of respiratory disease which this mortality represents most of the sufferers recover completely. Nevertheless, the few are still too many who bear lasting traces. Moreover, we must remember that a very large number who suffer are not registered under respiratory diseases, as, for instance, patients with rickets, and some of those with diseases of the throat and nose.

In this second zone of danger beginning with early childhood there is even more scope for the beneficial influence of the physician. A great deal must always depend upon his action.

The Medical Supervision of Infancy and Childhood and its Opportunities.

Although to you at your ages baby-life may be a little "uncanny" and perhaps abhorrent, you must face it at once that pediatrics has two departments—infancy, as well as childhood, both very different, but equal in their importance and in their intimate connection with the subject of respiration. Let me assure you, however, that babies improve greatly on acquaintance, and that you should not feel alarmed through being told that they require a special study, and that that study is a "specialism," into a belief that they are otherwise than intensely human, and at the same time supremely reliable in their somewhat limited intelligence department.

The early period of extra-uterine life is undoubtedly very passive but I would not resign the baby even then as a mere thing of the nursery to be fed and kept clean and warm; though this is the practical sum of our interference in normal cases. The physician should keep an ever watchful eye upon these automatic stages of existence in every direction, but particularly with a thought for the risks to the health of the alimentary tract.

Hardly less important is the long-wished-for medical supervision of childhood with its immense opportunities for prevention and for cure. The efficient medical inspection of schools is the first step to be taken in that promising direction.

The whole of pediatrics is governed by the central fact that the disorders to be treated occur during the stage of rapid growth of the organism, and this has two important aspects: (1) The tender age of the individuals renders them peculiarly susceptible to the damaging effects of disease, and makes more stringent our duty to protect them; (2) the *vis medicatrix* inherent to the most active periods of growth lends considerable assistance to any suitable curative methods that we may adopt. Everything is more plastic than in the adult, and, though disease may make greater havoc, treatment can avail much more to restore normal conditions, and our forecast of its results, as regards what may be possible and what is impossible, is therefore much more hopeful than at any other age.

Treatment and After-Treatment, Disease and Convalescence.

It may be safely predicted that a great portion of your future aims and achievements in practice will be in the direction of preventive treatment and of after-treatment. Too often nowadays the acute stage alone is treated. This evil is specially to be regretted in diseases of children, and above all in respiratory diseases. After any severe affection of the respiratory system an early removal of the patient to the country or seaside is undoubtedly to be desired; but on no account should the subsequent behaviour of the respiratory organs be lost sight of; but a careful watch must be kept for any after-effects, which might mean serious permanent curtailment of respiratory efficiency.

The Syllabus of these Lectures.

The special subjects to which I would invite your attention are: I. The Infantile Chest; II. The Infantile Respiration; III. The Thoracic Deformities; and IV. Some of the Pulmonary Lesions due to Infantile or Puerile Diseases.

But before entering into the anatomical and physiological features of the infantile and of the puerile respiratory system it is opportune for reference to lay before you a tabular list of the affections to which its various parts are liable.

SYNOPSIS OF THE CHIEF RESPIRATORY AFFECTIONS.

1. *Obstructive Affections of the Respiratory Tract.*

(1) Of the Upper Respiratory Tract.

	Acute conditions.	Chronic conditions.
Mouth . .	Glossitis Stomatitis	
Nose . .	Foreign body Rhinitis	Narrow nostrils. Chronic rhinitis. Deviation of septum.
Throat . .	Foreign body Tonsillitis Pharyngitis, etc.	Tonsillitis. Adenoids.
Larynx . .	Foreign body Spasmodic croup Diphtheria, etc.	Foreign body. Inflammation. Ulceration. Neoplasm.
Trachea . .	Foreign body Lateral pressure Swollen glands, etc. Diphtheria	Ulceration. Stricture. Pressure.

(2) Of the Lower or Intra-pulmonary Respiratory Tract.

	Acute conditions.	Chronic conditions.
Large bronchi . .	Foreign body Diphtheria Stricture	Foreign body. Ulceration. Stricture. Pressure.
Small bronchi . .	Tubercle Atelectasis Bronchiectasis Ulceration Spasmodic affections (acute and chronic) Whooping-cough Asthma	Pneumonia. Tuberculosis. Atelectasis. Emphysema.

	Acute conditions.		Chronic conditions.	
Alveoli	Lateral pressure		Inflammation (acute and chronic)	Pneumonia. Broncho-pneumonia.
	Infarction	Secretions Serum Blood Fibrin		Emphysema. Interstitial pneumonia. Fibrosis.
	Foreign body (Inhaled fluids)			
	Neoplasms			
	Emphysema			

II. *Thoracic Affections.*

Spine	Malformations. Injury. Chronic disease and curvature. Deviations.
Sternum	Malformation and deficiencies. Angular and other deformities.
Ribs	Malformations. Deficiencies or supernumerary supply.
Cartilages	Malformations. Deformities due to rickets, etc.

III. *Pleural Diseases.*

Pleurisy	acute	chronic
Effusion	,,	,,
Agglutination	,,	,,
Adhesions	,,	,,
Thickenings	,,	,,
Tubercle	,,	,,
Neoplasms	,,	,,
Empyema	,,	,,
Pneumothorax	,,	,,

IV. *Mediastinal Diseases.*

Anterior mediastinum	Mediastinitis (fibrous). ,, (phlegmonous). Thymus affections. Adenitis. Neoplasms.

Middle mediastinum pericardium .	Pericarditis.
	Hydro-pericardium.
	Pyo-pericardium.
	Pneumo-pericardium.
	Agglutination.
	Thickening.
	Adenitis.
	New growths.
	Tubercle.
Posterior mediastinum . .	Glandular affections.
	Œsophageal ,,
	Aortic ,,
	Etc.

I have placed this long list before you at this early stage that you might have at once the benefit of a synopsis of the many details which I cannot even touch upon; but particularly to enable you to identify from the first the field of clinical usefulness in which you will be called upon to labour, and the material upon which you will have to work.

In these lectures your attention will be more specially called to the intra-thoracic respiratory affections, and to the conditions which result after bronchitis and emphysema, whooping-cough, empyema, and rachitis. But let me now briefly refer, for the purpose of illustration, to the obstructive affections of the upper respiratory tract, the acute and the chronic varieties of which are tabulated in separate columns.

You are well aware that the usual effect of acute obstructions occurring at any level between the epiglottis and the bifurcation of the trachea is a more or less severe inspiratory dyspnœa. This dyspnœa is in striking contrast with that which is usually termed expiratory dyspnœa, and which is observed in other conditions, including intra-pulmonary obstructions and abdominal distension.

You will note that it is not the acute stenosis that leaves the after result. An attack of diphtheria will alter the rapid and easy infantile inspiration into a long hoarse struggle for breath; it will even draw in the sternum and epigastrium; but if it should not prove to be fatal all this will vanish, and the shape of the thorax will be completely restored. This is also true of the other acute high level obstructions. It is the chronic local ailments, negligable from day to day, that end in doing the permanent mischief.

Chief among these too lightly-termed "trivial" ailments we recognise the obstructive affections of the pharynx, nose, and naso-pharynx, and, as it seems, the increasingly frequent evils of overgrowth of tonsils and adenoid tissue. Whether their increasing prevalence be or not a fallacy, the fact is not to be doubted that they supply by far the largest contingent of permanent damage.

What is the office of pediatrics in this connection?

(1) *Prevention* is obviously the first indication. It will never cease to be your duty to try and forestall this evil until you have finally succeeded. Unfortunately we have not yet even cleared up the mystery of its origin. Why adenoids? Whence do they arise? As we are still helpless in our etiology and prophylaxis, what is our next duty?

(2) *Timely treatment* is a special indication in all affections leading to after-results; and for that purpose the first essential is early diagnosis. Let us in the future study adenoids in infants before the condition is established. In other words, we should examine infants from the point of view of their future liability. Babies with narrow passages and thick mucous membranes are not unlikely to be the future sufferers from adenoids.

(3) *After-treatment,* I need hardly say, is the next task before us, though if too long delayed it may not be completely successful. The removal of the overgrowths often comes rather late, and not in time to obviate the deformity, or the deafness, or the backwardness; but perhaps even then a more assiduous after-treatment might take greater effect. This means that when the obstruction has been removed we shall not shrink from the trouble of a systematic re-education on the lines laid down by Desgrange, Rosenthal, Harry Campbell, and many others. Already laudable efforts have been made to cure the evil of *mouth-breathing*; but much remains to be done in this direction and in that of defective articulation, and also in the teaching of free and deep breathing. Upon this much might have been said from the aspect of the State and of the ratepayer.

From this brief sketch you will gather that the business of respiratory pediatrics is not perfunctory, and that it includes the problems of the etiology and prevention of the original diseases themselves, and the successive duties, first, of curing these diseases; secondly, of limiting as much as possible the range of their immediate damaging effects; and thirdly, of doing our best to remove or amend the lasting after-damage which they are apt to leave behind.

Perhaps you will now consider that we are justified in attacking the subject in a thorough manner and at the right end—that of a study of its fundamental principles and of its elementary facts and methods.

I. *The Infantile Chest.*

(1) *The thorax* in infants is generally described as cylindrical, with more horizontal position of ribs and of costal cartilages than in the adult, the clavicles being also elevated and the neck therefore short. (2) This marked "inspiratory" type of conformation is correlated with the internal distribution of space within the thorax. Much of the latter at the base is devoted to abdominal contents under a high diaphragm, whilst at the upper part the thymus claims a varying share. The tendency, conspicuous in infancy, and particularly in early childhood, to abdominal enlargement leads to a broadening of the base of the thorax, which in rickets becomes excessive. (3) The thoracic cage is remarkable for the extreme lightness, pliability, and mobility both of its ribs and of its cartilages.

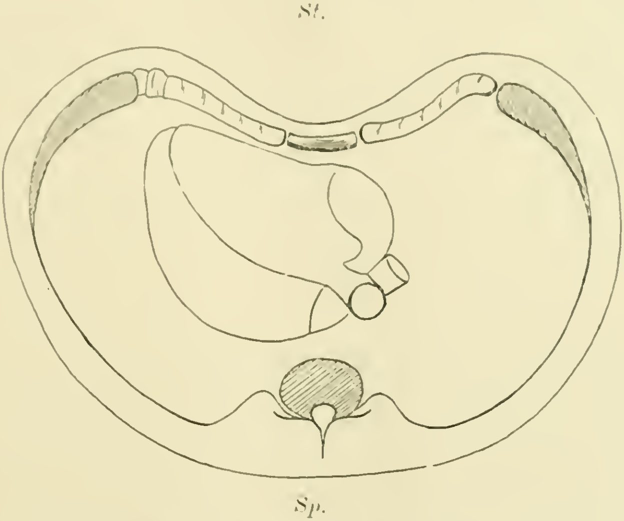

FIG. 1.—Inspiratory recession of sternum and costal cartilages, with left-sided position of heart, in acute stenosis of the upper respiratory tract.

(2) *The infantile lung* is (*a*) relatively smaller than the adult lung, in proportion to the size of the heart and to the intra-thoracic cubic space, more of which is allotted to other viscera. It is also relatively shorter, owing to the rather higher level of the diaphragm. (*b*) It is remarkably delicate and elastic, easily stretched, and easily collapsed. (*c*) Among its most telling features is the minute size of the air tubes, and particularly of their finer ramifications, which

exposes the latter to obstruction from the smallest collections or pressures. Thus atelectasis would quickly result in the small and collapsible air cells; while the shortness of the tract along which atmospheric pressure reaches them when patent favours their rapid expansion. In conclusion, the anatomical features might almost be summed up in one word—"minuteness."

The relative pliability of the various parts of the thoracic skeleton in health is well seen in the acute stenosis of tracheal obstruction by foreign bodies or by diphtheria. The sternum is drawn in bodily, together with the costal cartilages, as far as their costal junction, by the effective work of the muscles of ordinary and extraordinary inspiration which are attached to the long ribs and clavicle, and of the diaphragm. Part, however, of the work of the diaphragm remains ineffective, and goes to drag in the lower costal arches above the epigastrium, and also the soft parts of the latter. In other words, the bony ribs prove to be sufficiently rigid fulcra, but the costal cartilages are not equal to the atmospheric pressure and to the traction brought to bear upon them by the strongest inspiratory muscular contractions. We shall see that the conditions present in rachitis lead to a different result.

II. *The Infantile Respiration.*

The functional peculiarities agree with the structural. The respiratory function is still on a small scale, not being required for any muscular or nervous work other than that implied in vegetative life. The machine is working at low pressure, and its mechanisms, although exceedingly ready for smooth work, are slender and vulnerable, and easily thrown out of order.

The special physiological features might partly be inferred from the anatomical data. *The thorax* will yield more readily to lateral pressures, but will not possess the same elastic resiliency as in the adult. This implies a relative weakness of the elastic factor in passive thoracic inspiration. The ribs being more horizontal, *i. e.* raised into the infantile "inspiratory" position, are allowed relatively less inspiratory play, but this is partly compensated by their greater pliability. *The lung,* owing to the shortness of the aërial tract, will be rapidly inflated down any patent bronchi; and any local delay in thoracic suction or in the ready passage of air will favour emphysematous encroachment of the neighbouring lobules, and inexpansion of any lobule slow to act. It would thus seem that each lobule is more dependent than in the adult upon the action of that part of the chest wall which immediately covers it. This point needs to be elucidated by the following remarks.

In the more rigid chest of adults pulmonary expansion is partly effected by suctional forces transmitted for appreciable distances from the chest wall through the lung itself. It is true that in the fully acting thorax each section of the lung is stretched by the local expansion of each corresponding part of the parietes. But supposing that a great part of the thorax should happen to be immobilised, this would no longer obtain. Take the instance, say, of an immobilised apex: this may be incapable of inflation except only through a suction or traction conveyed to it, perhaps from the base, through the tissue of the lung itself. In infants the slight delay which this indirect mechanism of inflation by conduction implies becomes quite appreciable in proportion to the very brief duration of the inspiratory act, and it would be quite sufficient to afford the opportunity for emphysema of the base to develop at the seat of direct application of the force, where there was no resistance to be overcome. This mechanism should not be lost sight of in our clinical work.

III. *The Normal Type of Infantile Respiration.*

The views which I have to lay before you have been mainly formed from occasional observation at the cradle-side. Their correctness has not been tested by physiological methods. They may be in some directions mistaken, and they are certainly not complete. But such as they are I do not withhold them. So far as they have been taken from nature they are in their broad outline reliable, and such as you can extend and correct by your own observations: and to-day they can at least serve a temporary purpose as illustrations for the clinical remarks of this lecture.

The normal varieties of infantile breathing may be arranged in three groups: (1) the *tranquil breathing of sleep*; (2) the *breathing of excitement*, including the ordinary active breathing and the disturbed breathing; (3) the *forced breathing*, including the physiological hyperpnœa and the pathological degrees of dyspnœa.

In addition to these varieties a mention should be made of the morbid types which diverge more or less from the normal, and a brief description will be given of some aberrant types, under the names of Inverted Respiratory Rhythm and Inverted Respiration.

Though we may well doubt the existence of any strictly infantile type essentially different from the adult, there is one great peculiarity which is distinctive, namely, the extreme rapidity of the respiratory acts, and more specially of inspiration, as distinct from the respiratory pauses. Additional infantile features are the extreme versatility of the style of respiration and the remarkable mobility of every part. This very plastic tendency affords scope for the variations observed respectively in tranquil and in active respiration.

(1) *The tranquil respiration of sleep* need not detain us. The movements are slight, but generally involving the thorax as well as the abdomen. The breathing is shallow, the rate relatively quick, and the rhythm less steady than in the adult owing to the great excitability of the respiratory centre.

(2) *The active and the disturbed types of respiration.* Greater depth of inspiration and of expiration, both thoracic and abdominal, is the first element of contrast. Perhaps the infant whilst being nursed breathes rather more with his thorax than when lying down, and thoracic breathing is also more conspicuous under pleasurable excitement leading to smile or to laugh. But the most striking feature is the variability of the rhythm. Under the influence of exertion of the limbs, or of psychical excitement, the breathing is very apt to suffer complete interruptions between periods of very rapid rhythm. We are reminded of the Cheyne-Stokes type, but we entirely miss the systematic waxing and waning. Here the apnœic interval begins and ends quite abruptly, and the groups of hurried breaths present no gradations.

As to the nature of the respiratory movements I cannot give you very accurate data, the conditions being unfavourable for reliable observation. Probably in addition to the common mechanisms some of those so readily observed in the hyperpnœic infant during sleep are at work on a small scale.

(3) *Hyperpnœa,* so readily set up by excitement, is also very easily induced in infants and young children by the slightest element of oppression or of obstruction. The trifling degree of bronchitis in my little patient with whooping-cough has sufficed to produce some hyperpnœa which we have been able to watch and study during his quiet sleep. This gave me the opportunity of introducing to your notice a very remarkable and important respiratory mechanism, which I shall proceed to describe.

But in connection with forced respiration I must not omit to call your attention to the fact that in infancy respiratory distress or dyspnœa, when due to disease, is much more largely evidenced by rapidity than by depth of breathing, by tachypnœa than by hyperpnœa. This may perhaps be explained in relation to the weakness of the muscles and of the chest wall, which do not favour deep and sustained effort, and to the shortness of the air ways, which favours rapidity of the gaseous exchanges.

IV. *The Respiratory Function of the Spine in Infancy and Childhood.*

In the hyperpnœa of infancy and of early childhood movement is apt to be set up by the effort of breathing almost in every part of the body. Thus in the boy with whooping-cough we could trace respiratory movement, not only of the head, but also of the leg and of the foot itself. During exaggerated breathing, and even to some slight extent during quiet breathing, whilst the clavicle and costal arches move up with inspiration, the head, in spite of its great weight, is pulled down visibly. I was for some time puzzled to explain this contradictory result associated with the contraction of the levator muscles of the thorax. If engaged in raising the clavicles and the chest, a simultaneous lowering of the head hardly seemed to be within their possibilities. The key to the enigma is given by the spine. On inspection it is found to be actively moving with respiration, becoming more convex during inspiration and therefore approximating its cephalic and its pelvic extremities, and then unbending again during expiration. You can now perceive how the head whilst it travels down the pillow with the spine yet is able still to lift the chest and clavicles by means of the sternomastoid and trapezius, thus shortening the neck at each breath.

I need hardly say that the movements observed by us down the length of the lower extremities were communicated from the pelvis and transmitted from joint to joint by leverage of the long bones. As a fact the weight of the head, great in proportion as it is to that of any one part of the body, is not equal to the drag of the powerful spinal muscles; and neither the head nor any part of the trunk is capable of acting by sheer weight as a steady anchor or as an immovable fulcrum, for the respiratory muscles, and somewhat as in the writhing of a worm, the whole body is apt to revolve about its own centre of gravity.

My first acquaintance with this singular mechanism was made in the adult many years ago, though I have never published my observations. But I am now concerned with its physiology rather than its pathology; and in the infant it is a distinct physiological function.

If we place the hyperpnœic child upon its back the inspiratory descent of the head is perceptibly reduced; the bending of the spine being now hampered by the weight of the body, the resulting loss in pulmonary expansion is now made good chiefly by the diaphragm, which in the prone and in the "curled up" postures had less of an opportunity. It thus appears that the spine has a respiratory function in early life, and that that function stands in an associated and complementary relationship to that of the diaphragm.

Why should this function be limited to that period of life? I believe that in the case of the spine as well as in that of the diaphragm there is in infancy an additional purpose—that of providing in this way constant practice for those muscles which are intended later to hold the body erect, and which unless exercised could hardly grow equal to their future work. The spine during months spent in apparent immobility is gradually training to act as the rigid column of support for the body.

V. *The Inspiratory Forces. The Absence of Orthopnœa, and its Substitutes.*

I need not take you over your elements of physiology. The muscles of ordinary and those of extraordinary inspiration are all present in the infant; the only question is as to their function. I may remind you, however, that in the adult, whilst the intercostal muscles work with the help of movable fulcra, the muscles of hyperpnœa work from *fixed fulcra.* From that point of view we may distinguish two sets of muscles—those with spinal fulcra, and those with external fulcra; the trapezius illustrates the one, the pectoralis major the other. Let a man in orthopnœa be provided with a support for his hands or elbows, and his pectoralis major will then be enabled to raise his ribs. This help the infant is not able to command, for he is denied the mechanical advantage of orthopnœa; and as regards the spinal fulcra he is also at a relative disadvantage, since, as we have seen, they are not absolutely fixed. Moreover the ribs and clavicles are normally raised into an almost horizontal position, leaving little margin for any further rise. This opens up a practical question of treatment. In the dyspnœa of disease, are we justified in allowing infants to lie flat, whilst adults are propped up for their struggle with asphyxia? I believe that infants are not intended to sit up; their advantage, even in dyspnœa, is to be found in the horizontal posture. Nay, sometimes it may reside in a declivity of the shoulder and of the upper dorsal spine.

Infants have really *two substitutes for orthopnœa*—the one is spinal hyperpnœa; the other is abdominal hyperpnœa. Diaphragmatic breathing needs no description; it is favoured by the dorsal decubitus. As to the spinal contribution, it is obvious that its best opportunity is afforded by the prone posture, and the next best by the lateral decubitus. To this point I shall revert in connection with the morbid types of respiration as well as to the question of the mechanical advantage to be gained by the bowing of the spine. I need only point out that when the ribs have attained their maximum elevation to a horizontal level, the only possible way to any further increase of the thoracic capacity is that the spine should recede upwards and backwards from the plane of the sternum, thus enlarging the costo-spinal angle from a right angle to an obtuse angle.

VI. *The Expiratory Forces and Abdominal Respiration.*

Again, for expiration we are provided with two sets of muscles respectively, with fixed and with movable fulcra. But a third set comes into play, and is by far the most powerful—the antagonists of the diaphragm, our arch inspirer, viz. the abdominal muscles. It is in this direction that nature has made it up to the infant. It seems almost as though the art of expiration, which is so invaluable, but so apt to remain unlearnt, had been placed at the head of the curriculum as the first indispensable, and kept there for constant rehearsal until the dawn of childhood. The infant might be regarded as an expiratory machine constantly at work, and possessed of extraordinary energy. Its offices are not merely respiratory, as you well know, but extrusory. At this vegetative stage of existence, respiration, and particularly expiration, is kept at work in the alimentary department as a substitute for the work of locomotion, with the help of the two terminal automatic safety valves, the sphincter of the rectum, and that of the cardia. To these must be added the laryngeal valve, the functions of which are of an associated and yet different order, because directly subservient, not to the abdominal cavity and contents, but to the complementary cavity of the thorax.

In this way the infant goes on crying, vomiting, and excreting on the strength of his remarkable expiratory facilities, and in performing these straining functions he is perpetually training those anterior abdominal muscles which are to help confer the privilege of man's erect posture and fitness for the strain of any hard work. The prominence of the abdominal share in the respiration of the young has been emphasised by the *puerile type*, being usually described as "*abdominal and inferior costal.*" The infant, who can neither stand nor sit up to breathe, but only sprawl, is not absolutely limited to any type, any more than the child; but it is decidedly more dependent upon abdominal breathing both for inspiration and for expiration. As regards forced expiration this may be said to be almost exclusively diaphragmatic in infancy.

VII. *The Puerile Type of Respiration.*

The infantile style of breathing comes to end with the assumption of the erect posture, and of the muscular activity of conscious life, and with the exercise of will over the various sphincters.

A transitional stage, or early puerile type, might be considered; but except in cases of delayed development, as in microcephaly or rickets, it has no duration.

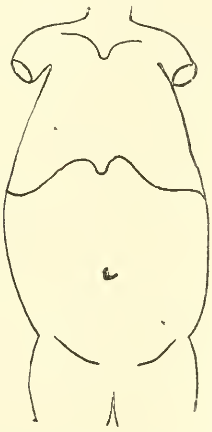

Fig. 2.—Exaggerated infantile type seen in rickets.

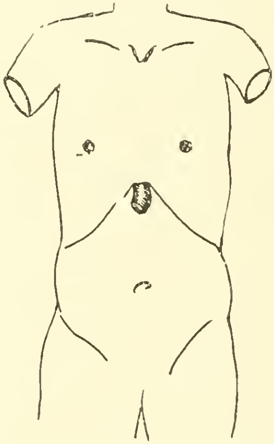

Fig. 3.—Late puerile or adolescent type.

The *true puerile type* is that described in books as the "abdominal and inferior costal." It differs from the adult type only in the persistence of some of the infantile features of chest conformation, such as the large abdomen, the high level of the diaphragm, the raised ribs and shoulders, and therefore the restricted mobility of the upper ribs, the greater mobility of the lower ribs, and the considerable activity of the diaphragm. The modified, and particularly the inverted, rhythms of respiration so often noted in infants no longer occur, except during fits of sobbing.

As the stature increases and the muscles and the heart become trained to sustained work the last vestiges of the infantile type disappear. The still slightly pyramidal chest of the early puerile stage is transformed into the correct academical thorax by the fining down of the waist and the expansion of the upper ribs. The neck elongates and the shoulders slope gently. Henceforth the diaphragm is no longer pushed up: it is *sucked up*, together with the abdominal contents, by the increasingly powerful elastic stretch of the lungs, which, as the need arises, it takes more or less of a share in inflating.

VIII. *The Art of Breathing.*

The rest is done by the natural development of the body under exercise. And yet the results differ, both as regards the chest and the use which is made of it. Some have better chests than others, and among those with good chests some have better instinctive knowledge of breathing. Among the ill-favoured juvenile population of our large towns a great deal of pathology enters into the moulding of the thorax, and the process of respiratory self-education is not to be relied upon. Awkwardness of breathing, or faulty breathing, prevails more largely than among the country population because of the greater prevalence of adenoid affections. And therefore in towns pathological types of respiration have to be unlearnt and physiological breathing has to be taught like a lost art. For this a first essential is the systematic inspection of all children by highly competent observers capable of recognising, not only manifest cases where chest deformity coincides with faulty function, but also those less advanced where the latter tends to bring about insidiously pulmonary as well as thoracic impairment.

ENTERIC FEVER IN INFANCY.

By Otto Grünbaum, M.D., D.Sc.,
Assistant Physician to the Belgrave Hospital for Children.

The difference between the clinical picture of typhoid fever in infancy and in adult life is so great that for many years it was thought that young children did not suffer from that disease, but from one which bore a slight resemblance and was termed "remittent gastric fever of children."

Rilliet* and Taupin† were the first to show that "remittent gastric fever of children" was in reality typhoid fever.

* 'De la fièvre typhoide chez les enfants.' Thèse. 1840.

† 'Journ. des connais. méd. chir.,' Nov.–Déc., 1839, Jan., 1840.

In studying disease due to a micro-organism, it is necessary to recognise as cases of that disease illness accompanied by an invasion of the specific bacillus, and one is not justified in excluding any, simply because they do not happen to evince typical signs and symptoms. It will be seen shortly that enteric fever may occur in the young infant without a rose-coloured eruption, without diarrhœa, without abdominal distension or tenderness, without enlargement of the spleen, even without pyrexia.

Analysis of the cases admitted into the children's wards of the London Hospital during the last two years illustrates the comparative mildness of enteric fever in children (*vide* table, page 163).

(I have to thank the members of the medical staff of the London Hospital for their kindness in permitting me to refer to cases.)

(The agglutination reactions were performed by Dr. Bulloch, bacteriologist to the hospital.)

The first and most striking point to arrest attention is the short duration of the pyrexia, the average being eleven days after admission into hospital. Diarrhœa was noted in five cases, whilst a history of that complaint for a few days before admission was obtained in ten cases, but how far this was due to the administration of household remedies by the relatives was not ascertained. The characteristic lassitude was often absent. Distension of the abdomen was present in all but two cases. The spleen was felt below the costal margin in 17 patients. Spots were observed in 21, whilst bronchitis was found in the same number. None relapsed.

The following table of 36 cases is too short to permit of any definite conclusion, but it may be used to corroborate those drawn from other and more extensive observations.

Henoch states that he has seen 381 cases of typhoid in children, of which 331 were treated in hospital. Of these only 26, or less than 7 per cent., came to autopsy. A large number of these date from before 1896,* and therefore must have been rather severe cases, and presented typical signs and symptoms of disease, for prior to that time the agglutination reaction was not known.

The short duration of the pyrexia points towards the comparative mildness of the disease in children.

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* The agglutination reaction for the diagnosis of enteric fever was first used by A. S. Grünbaum in Vienna, March, 1896. *Vide* Ross, 'Lancet,' February the 1st, 1902, p. 332.

Registered number.	Sex.	Onset.	Age.	Days of illness before admission.	Temperature on admission.	Maximum temperature.	Duration of pyrexia after admission.	Distension of abdomen.	Constipation.	Diarrhœa.	Spleen enlarged	Spots.	Bronchitis.	Relapses.	Dilution.	M = macroscope. m = microscope	Time.	Diarrhœa before admission.	History of disease in family.
					Degrs.	Degrs.													
1765	M.	I.	11/12	21	97	99	0	+	−	+	−	−	−	−	1 in 100	M + m.	8 h., 10 m	−	+
2260	F.	S.	2	14	102	103	4	+	+	−	−	−	−	−	1 in 100	m.	5 m	−	+
2197	M.	I.	3	14	103	103	4	+	+	−	−	−	+	−	1 in 100	m.	30 m	+	+
1352	M.	I.	3	7	101	104		+		Died.					1 in 100	m	20 m.	−	−
65	M.	I.	3 9/12	10	102	102	2	+	+	−	+	+	−	−	1 in 100	m.	30 m.	+	−
2379	F.	I.	4	14	99	102	4	+	+	−	+	+	+	−	1 in 100	m.	10 m.	+	−
910	M.	I.	4	7	103	103	14	+	+	−	+	−	−	−	1 in 5	M.	2 h.	+	
267	M.	I.	4	10	103	103	22	+	−	+	−	−	+	−	1 in 100	m.	5 m	+	
1578	F.	I.	4	7	103	101	5	+	+	−	+	+	−	−	1 in 100	m.	5 m.	+	−
1074	M.	I.	4	5	102	101	16	+	−	+	+	+	+	−	1 in 100	m.	20 m.	+	−
200	F.	I.	4	21	104	104	11	+	+	−	−	+	+					+	−
296	M.	S.	4	5	104	104	30	+	+	−	+	+	+	−	1 in 100	m	15 m.	+	+
192	M.	I.	5	9	103	103	5	+	−	−	−	−	+	−	1 in 100	m.	30 m	+	+
1027	F.	I.	5	21	99	103	8	+	+	−	−	+	+	−	1 in 5	M	5 m.		
1329	M.	I.	5	14	104	104	10	+	+	−	+	+	+	+	1 in 100	m.	30 m	−	−
2261	M.	I.	5	7	104	104	10	+	+	−	+	−	−	−	1 in 100	m.	30 m.		+
1737	M.	I.	6	3	104	104	20	+	+	−	−	+	−	−	1 in 100	m.	30 m	−	−
132	F.	I.	6	5	100	104	20	+	+	−	−	+	−	−	1 in 100	m.	60 m	−	−
299	F.	S.	7	3	102	102	14	+	+	−	−	+	+	−	1 in 100	m.	15 m	−	+
1801	M.	I.	7	8	104	104	16	+	+	−	+	+	+	−				−	+
1563	M.	I.	7	21	102	102	5	−	+	−	−	−	−	−	1 in 100	m.	5 m	−	−
575	M.	S.	7	3	101	104	8	+	+	+	−	+	+	−	1 in 100	m.	30 m	−	−
2351	M.	I.	7	18	102	102	6	+	+	−	+	−	+	−	1 in 100	m.	10 m	−	−
2589	M.	S.	7	7	101	Died on the day after admission.													
579	F.	I.	8	14	102	102	8	+	−	+	+	+	+	−				−	−
1313	M.	I.	8	14	102	104	6	+	+	−	−	+	+	−	1 in 100	m.	5 m.	−	−
2162	F.	I.	8	21	104	104	1	+	+	−	+	+	+	−	1 in 100	m.	20 m.	−	+
2005	F.	I.	8	8	104	104	6	+	+	−	+	+	+	−	1 in 100	m.	10 m	−	+
1214	F.	S.	8	15	104	104	27	−	+	−	−	−	+	−	1 in 100 1 in 10	m. M.	2 m. 60 m	−	−
959	M.	I.	8	14	103	105	11	+	+	−	+	−	−	−	1 in 5	M.	1 m	−	
129	M.	I.	8	8	101	102	7	+	+	−	−	−	−	−					
83	M.	S.	8	17	104	104	14	+	+	−	−	+	+	−	1 in 100	m.	5 m.	−	
2210	M.	I.	9½	7	101	101	7	+	+	−	+	+	−	−	1 in 100	m.	10 m.	−	
1846	F.	I.	10	5	103	104	6	+	+	−	+	+	+		1 in 100	m.	1 m.		−
2154	F.	I.	10	4	103	103	14	+	+	−	+	+	+	−	1 in 100	m.	5 m	−	−
2100	F.	I.	10			Died from broncho-pneumonia.													

S = sudden. I = insidious. + = present. − = absent.

Duration of pyrexia. Total time.	Henoch. 229 cases.
Under 9 days	14
10 „	12
11 „	18
12 „	10
13—15 days	56
16—17 „	15
18—20 „	33
20—23 „	40
24—30 „	16
Over 30 days	5

Duration of pyrexia after admission.	London hospital. 32 cases.
Under 9 days	18
10 „	2
11 „	1
12 „	0
13—15 days	5
16—17 „	2
18—20 „	2
20—23 „	1
24—30 „	2
Over 30 days	0

Of Henoch's cases close upon 50 per cent. had normal temperatures within fifteen days. Of those admitted into the London Hospital 50 per cent. had normal temperature within nine days after admission. So many of Henoch's cases date from before 1896 that the absence of symptoms is not especially noted. Adams analysed 337 cases of typhoid fever which occurred in the Children's Hospital in the region of Columbia. Of these there were only 18 cases of infants under four since 1896. Of these 18, four had no signs or symptoms other than pyrexia and agglutinine in the blood. Nine had enlarged spleens, seven epistaxis, and two well-marked general symptoms.

The absence of signs and symptoms was well illustrated by a case which came under my observation last September.

W. R—, aged 11 weeks, was brought to the out-patient department of the Belgrave Hospital on September the 8th, 1904, by his grandmother, who stated that he had suffered from diarrhœa for three weeks and had wasted rapidly during the last seven days. On making inquiry I learnt that the child had been breast-fed until he was seven weeks old. His mother ceased to suckle him owing to illness, and was later taken to a fever hospital suffering from typhoid fever. The grandmother had tried various forms of food, and since diarrhœa persisted brought the child to the hospital. The child had been well looked after and correct food administered, and therefore, in spite of the fact that the temperature was normal, I suspected enteric fever, and recommended the grandmother (since there were no vacant cots at the Belgrave) to take the child to the London Hospital, where it was admitted under the care of Dr. Percy Kidd, whom I have to thank for permission to publish the case.

The child was pale and wasted, the abdomen slightly distended. The spleen was not palpable below the costal margin. The liver was not enlarged. Spots were not seen. Diarrhœa persisted; on one occasion 11 stools were charted in 24 hours. The temperature was subnormal. The signs and symptoms of enteric after admission of the patient were absent; whether there had been definite signs before I was not able to find out from the grandmother. Since the temperature remained normal and the only signs of disease were diarrhœa and distension of the abdomen, there was some doubt at first whether it was more than an ordinary case of infantile diarrhœa; but no improvement following treatment, on September the 20th the serum was tested with a dead culture of Eberth's bacilli, and a well-marked macroscopic agglutination in a dilution of 1 in 100 was found within 14 hours.

I might mention here that the so-called Ficker's test can be carried out with ease and certainty with the amount of blood obtained by pricking a finger, by using Wright's throttled tubes to dilute the serum and allowing the agglutination to take place in tubes of about a millimeter calibre.

Dr. Bulloch tested the serum with live cultures of typhoid bacilli on the following day and found that macroscopic agglutination in a dilution of 1 in 10 was complete in thirty minutes and 1 in 100 within eight hours. With the thick emulsion of typhoid bacilli used in the bacteriological laboratory macroscopic agglutination in a dilution of 1 in 5 within an hour is, as a rule, definite evidence of enteric fever. It might be asserted that the agglutinines had been transmitted in the milk of the mother in the same way as antitoxins have been shown to pass from nurse to suckling. For this reason I obtained through the courtesy of Dr. Caiger a specimen of the blood of the mother, and it was found that her serum gave a positive macroscopic agglutination in a dilution of 1 in 32, but not in higher dilutions. Taking into consideration that the child was suckled for less than a week after the mother began to feel ill, and that more than five weeks had elapsed between the suckling and the examination of the blood of the infant, and that also the child's blood agglutinated in a dilution three times as great as that of the mother's, one is forced to abandon the view that the agglutinines were transmitted from the mother. Another possibility is that the infant had an abnormally high agglutinating power congenitally.

A specimen of blood was taken from the infant towards the end of January, 1905, and it was then found that in a dilution of 1 in 100 there was not the slightest sign of agglutination microscopically after an hour.

The next question which has to be considered is whether the agglutinating power was developed without the child suffering from enteric fever, in the same way as is occasionally reported that nurses and bacteriologists delevop an agglutinating power without, as far as we can tell, actually having the fever. About this so little is known that it seems wise to adopt the more probable view, and that to my mind is that when an infant suffers from prolonged diarrhœa, distension of the abdomen, and wasting, and develops a very large amount of agglutinine in its blood, it is suffering from enteric fever, and that the persistent diarrhœa and powerful agglutination do not happen to be coincidences. It is true that on the one occasion on which typhoid bacilli were sought in the urine the result was negative.

Thursfield* examined the blood of 100 children and found that in the 42 cases which gave a positive reaction in a dilution of 1 in 30 (microscopic) all had typhoid fever, and concludes that "in children's disease a positive Widal reaction is trustworthy evidence of the presence of typhoid fever."

The absence of pyrexia is not strong evidence against typhoid for two reasons: (a) We have seen in the table that it is not uncommon for the temperature to be normal during the third week, and the patient W. R— was not brought to the hospital until the third week. (b) From time to time cases of apyrexial typhoid fever are recorded.

Pearson Irvine† found ulcers in the intestine of a child of two months, which were indistinguishable from typhoid ulceration. The child had died suddenly and was said to have been well until shortly before its death. This author writes: "We should remember that typhoid is frequently masked in adults and that in children the indications of its existence may be so slight as to suggest to the ignorant nothing more than harmless disturbance of the stomach and intestines."

R. Harman‡ records a case of sudden death due to thrombosis of cardiac veins in a patient who had been in the hospital for several weeks with a normal temperature. At the post-mortem typhoid ulceration of intestine was found.

G. Jubb§ recorded a case of afebrile enteric fever in which the temperature only rose during the complication of thrombosis of a vein. The agglutination was positive, but unfortunately the dilution is not stated. An unsigned letter criticises Jubb's case and says that if it were enteric many cases are missed. I agree.

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* 'Brit. Med. Journ.,' September, 1901, p. 596.

† 'Lancet,' November, 1877, p. 684.

‡ 'Trans. Acad. of Med. in Ireland,' 1887.

§ 'Brit. Med. Journ.,' December, 1904, p. 1511.

The fact that cases of typhoid fever in infants are missed and may become a centre of infection has been insisted on by many and by none more emphatically than by Rob. Koch. Koch found in the neighbourhood of Triess that of 52 cases which occurred amongst children only three were notified, the others had not been diagnosed, and apparently several were only definitely shown to be enteric by the agglutination reaction. The same observer found that the vast majority of cases were infected direct from another case, and therefore the possibility of diminishing the spread of enteric fever by personal cleanliness is obvious. It is not possible in every case of infantile diarrhœa to have an agglutination reaction performed, but it is possible for every case to be treated as if the excreta contained a poison which would lead to disease in others if introduced into the alimentary tract.

It is essential that the nurse wash her hands thoroughly after attending to the patient,and that the water in which the diapers are washed be thrown away immediately, and the vessel rinsed and not used for any other purpose.

The point I wish to make quite clear is that enteric fever in infancy is often mild and difficult to diagnose, and therefore it is wise to consider all doubtful cases as infectious and to treat them accordingly.

CASES OF ENTERIC FEVER IN INFANTS.*

By George Carpenter.

Case 1.—Rosina Y——, aged 13 months, was admitted into the Evelina Hospital under my care on October the 11th, 1895. She had been ailing for five weeks; her motions were light-coloured and she had a cough. Her brother was convalescing from enteric fever.

On admission she had a pale face, her breathing was laboured and jerky, and she was sick twice. The abdomen was tumid and tender, there were ten typhoid spots on it and the loins, and the spleen was enlarged. The pulse-rate was 145 to the minute, the respiration-rate 44 to the minute, and the temperature, which was 99·8° F. at 1.30 p.m., rose to 100·6° F. at 12.0 midnight—the highest recorded while under observation.

October the 15th.—Since admission into the hospital she has slept well. Her face has been alternately pale and flushed: there has been an occasional cough and hurried respiration. She was slightly sick on one occasion, and on one day was troublesome about taking food. She passed two loose motions on this date, but prior to this her evacuations had been normal. On the 14th her pulse was occasionally very weak.

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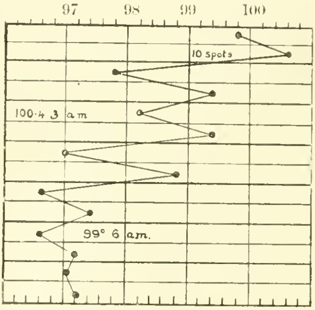
* This communication only deals with cases under two years of age.

October the 20th.—Since the 15th her temperature has been subnormal and the pulse-rate and respiration-rate much less frequent. One or two loose motions have been passed daily. Her face has been flushed occasionally. The spleen is still enlarged, and the abdomen is distended, but flaccid.

October the 26th.—She was discharged from hospital to-day. The spleen was still enlarged, the motions were normal, and she was well in all other respects.

Date.	Pulse.	Resp.	Time taken.	Bowels.		
Oct. 11	145	44	1.30 on adm.	0		Morning.
	148	42	12 p.m.	0		Evening.
12	144	55	9 a.m.	1		M.
	132	28	3 p.m.	1		E.
13	—	40	12 noon	1		M.
	124	34	12 p.m.	3		E.
14	114	36	9 a.m.	2		M.
	136	46	3 p.m.	1		E.
15	120	28	12 noon	1	Loose	M.
	102	28	9 p.m.	1	L.	E
16	100	28	3 a.m.	2	L.	M.
	105	32	3 p.m.	1	Normal	E.
17	94 100	27 32	6 and 9	2	L.	M.
	82	31	12 p.m.	2	L.	E.

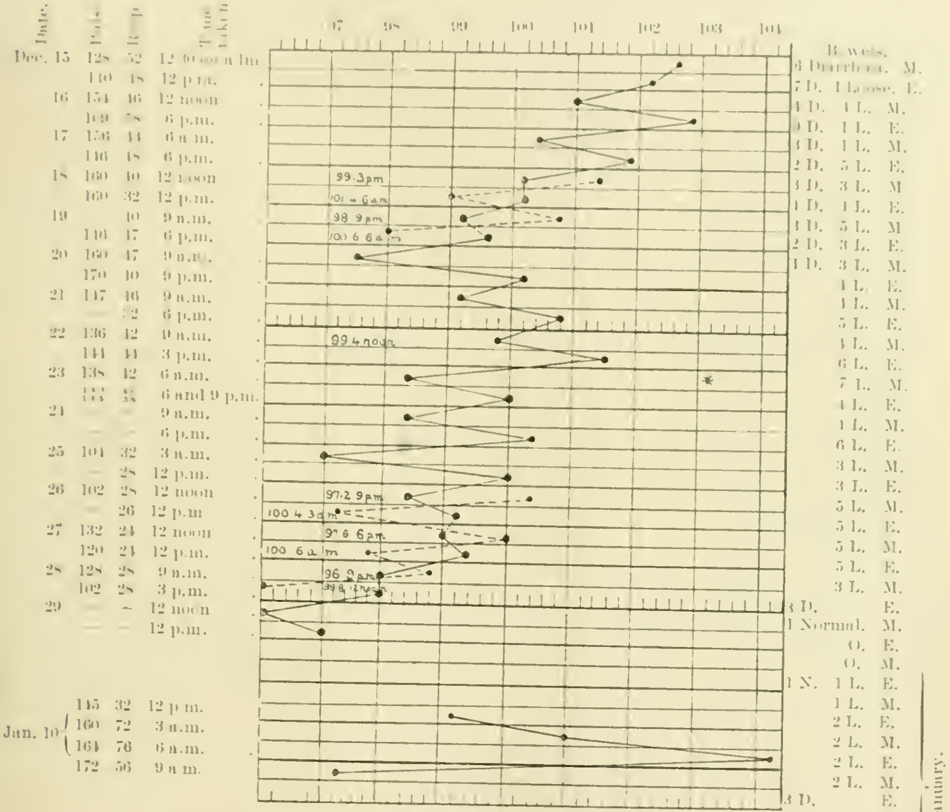


Highest and lowest morning and evening temperatures with the hours of their occurrence.

CASE 2.—James Alfred B——, aged 1¾ years, was brought to my out-patient clinic at the Evelina hospital on December the 15th, 1889. The infant on December the 10th had diarrhœa six or seven times during the day, and subsequently on the 11th "the diarrhœa stopped" and the abdomen became much distended. He was very sick, constantly retched, complained of headache, and was very thirsty.

When he came under my care there were râles and rhonchi all over the chest, with dulness, metallic râles and tubular breathing at the left base. He was fairly well nourished, the skin was hot and dry, and he was very restless. The spleen was felt two fingers' breadth in front of the costal margin. The pulse-rate was 128 to the minute, the respiration-rate 52 to the minute, and the temperature 102·6° F. During the day and night of admission into the hospital he passed fourteen liquid motions.

December the 24th.—Typhoid spots were noticed on the abdomen on the 22nd, they were less marked on the 23rd, and had disappeared on the 24th. Since the 15th to the 20th he had numerous diarrhœic and loose motions, during the twenty-four hours up to as many as eighteen of these. Subsequently the evacuations became less numerous and were loose in character. During the first few days he was under observation sickness was a prominent feature. The face was either pallid or flushed, and he was very fretful. On this date the pulse-rate was 138 to the minute and the respiration-rate 42 to the minute. The morning temperature was 98·4° F. and the evening 100·4° F.



M. = Morning. E. = Evening.

* Spots noticed on abdomen 22nd, less marked on the 23rd, disappeared 24th.

Highest and lowest morning and evening temperatures with the hours of their occurrence. The broken lines represent the highest and lowest temperatures recorded during the twenty-four hours with the times of their occurrence.

December the 29th.—The temperature was normal on the 28th and sub-normal on this date. On the 25th he developed tetany—hands and feet and elsewhere. The motions were and had been loose—from eight to ten evacuations in the twenty-four hours. The morning pulse-rate on the 28th was 128 to the minute and the evening pulse-rate was 102 to the minute. The morning and evening respiration-rates were 28 to the minute.

December the 30th.—Rigidity of limbs noticed, but this had disappeared on the 31st. On January the 1st, 1890, he had difficulty in swallowing, also on the 2nd, but this became less marked on the 3rd. On the 4th he was sick three times and his face was pallid. On the 5th he was crying all through the night, his face was ashen, and he was sick. During the day and night of the 6th he was sick several times. On the 7th he was sick four times during the night, and his extremities were cold ; during the day he was brighter, sat up in bed, but was sick twice. January the 8th, brighter. January the 9th, face very flushed ; sick four times during the night and once during the day. January the 10th, slept quietly until 1.0 a.m., when he awoke, screamed violently, and was very restless until 2.0 a.m. The face became very flushed, the breathing rapid and noisy. The head was retracted, the mouth twitched frequently. The arms and hands were rigid. He had great difficulty in swallowing at times. During the morning his face and lips were very pale, and he was slightly sick once. The limbs were rigid, the head was thrown back, he swallowed with difficulty, and was sick several times. He died at 1.15 p.m.

The temperature at 6 a.m. was 104·4° F., having with the exception of occasional rises to 99° F. been normal or subnormal since the 29th ultimo. At 9 a.m. it fell to 97·2° F. ; the pulse-rate at this time was 172 to the minute, and the respiration-rate 56 to the minute. The passage of loose motions continued throughout.

Autopsy.—Body much emaciated. Right lung slightly œdematous, left lung, an old attachment of the pleura opposite the left nipple. Left base semi-solid, does not sink in water, scattered patches of broncho-pneumonia. *Heart* normal (macroscopically). *Liver* enlarged and fatty. *Spleen* slightly enlarged, otherwise normal. *Kidneys* normal. *Mesenteric glands* considerably enlarged, several red in colour on section, no caseation. *Intestine*—Peyers' patches, some very congested and velvety, others appear quite normal ; one, however is undoubtedly ulcerated.

Remarks.—Enteric fever in infants is in the experience of all clinical physicians of very rare occurrence. Perhaps it would be nearer the truth to say that the disease is but rarely recognised in infants. When it does arise it is usually of an exceedingly mild type, it is apt on occasion to be wanting in essential symptoms, and it may even be apyrexial in its course. Gastro-intestinal disturbance, an enlarged abdomen, with and without slight fever, are so frequent in infants from simple causes that the possibility of these symptoms being due to enteric fever is apt to be overlooked unless this complaint be borne in mind. The cases narrated are the only examples of the disease that I have diagnosed during infancy with an experience of twenty years. The first case was of but short duration—a week's history of illness and but four days of trifling fever whilst under observation. Rose-coloured spots, a puffy and tender abdomen, splenic enlargement, and the fact that the brother was suffering from enteric fever at the same time made the diagnosis clear. Although the spleen continued to be enlarged there was no relapse. My second case, although occurring in infancy, did not conform to the infantile type in the way of mildness of attack—on the contrary, it was an exceedingly severe case. The fever was possibly of three weeks' duration, and probably more, and a crop of rose-coloured spots which lasted but a short period did not appear until the end of the second week, if not later. The initial diagnosis, which was made in pre-Vidal days, was broncho-pneumonia, and it was not until the advent of the rose-coloured spots that the nature of the illness was recognised. The same diagnostic value cannot be attached to splenic enlargement during infancy as in later childhood, as it is a relatively common occurrence during this period of life and arises from many causes, and of these typhoid fever is the most unusual and the least likely.* Diarrhœa was severe and prolonged, and sickness was a prominent symptom of the illness. Tetany, which is quite an uncommon complication in enteric fever in children, was a marked feature. The post-mortem findings leave no room for doubt that the amended diagnosis was correct, and that the case was enteric fever.

Clinical Memoranda.

BRANCHIAL CYST OF NECK.

By Isaac Newton, M.R.C.S., L.R.C.P.,
Medical Officer, Tonbridge School.

The following case appears to me worthy of record on account of the rarity of the cysts.

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* "On Splenomegaly in Infants and Young Children," by George Carpenter, M.D., 'Reports of the Society for the Study of Disease in Children,' vol. iii, pp. 296-317.

A. K—, aged 11 years, had a swelling under the chin in the median line. It was first noticed by her parents some four years ago. As it was gradually getting larger they brought her to me for advice. I found a cystic swelling the size of a pullet's egg situated in the middle line, under the chin, and reaching down to the hyoid bone. It was movable from side to side, but was attached apparently below. It moved with deglutition. Having decided to remove it, I made a median incision from the symphysis mentis to the upper border of the thyroid cartilage, through the platysma and mylo-hyoid muscles, and the fascia between the genio-hyoid muscles, which were stretched over the tumour. I then dissected out the cyst, which was lying in connective tissue on the hyo-glossal and genio-glossal muscles. It was most firmly attached by connective tissue to the upper border of the hyoid bone.

The cyst wall was about $\frac{1}{16}$ of an inch thick and had a smooth epithelial lining. The cyst was unilocular and contained a thick, cheesy, sebaceous-looking fluid. At a point on the upper portion of the cyst there was a small opening into it, which admitted the point of a pin, and out of which some of the contents could be pressed. This at first inclined me to the belief that it was a developmental cyst of the embryonic thyro-glossal duct (duct of His). But as it was situated above the hyoid bone and superficial to it, whereas the duct of His runs behind the hyoid bone to the thyroid gland, and cysts in connection with this lie below the hyoid bones between it and the thyroid gland and contain a glairy fluid, and not the sebaceous matter as was present in this particular specimen, the cyst in question must have been derived from the third branchial cleft, which is situated at the level of the hyoid bone.

Branchial cysts situated in the median line are much rarer apparently than the lateral.

Tonbridge.

The Society for the Study of Disease in Children.

A meeting of this Society was held on February the 17th, at No. 11, Chandos Street, W., Dr. Edmund Hobhouse (Brighton) being in the chair.

A Case of Unilateral Paralysis of the Third and Fourth Cranial Nerves of Congenital Origin was shown by Mr. N. Bishop Harman.

Dr. Porter Parkinson agreed that it might be due to an anterior poliomyelitis.

Mr. Sydney Stephenson pointed out that in some cases there was a marked history of heredity.

A Case of Hemiplegic Spasticity and Inco-ordination on the Right Side in a Child aged 5 Years was shown by Dr. Hobhouse (Brighton). Weakness of the right arm was followed a year later by inco-ordinate movements of the leg. Six months before any nervous symptoms appeared the child had convulsions. There was neither optic neuritis nor mental impairment. The condition had remained stationary for the last eight months. There was considerable spasticity on the right side, and it was almost impossible to obtain a knee-jerk.

A Case of Chronic Joint Disease, Splenomegaly, and Enlarged Axillary Glands in a Girl aged 12 Years was shown by Dr. F. Parkes Weber. There had been a definite general reaction to tuberculin, and he regarded this as a valuable indication for treatment.

A Case of Chronic Arthritis in a Boy aged 8 Years was shown by Dr. F. J. Poynton. The affection was most marked in the hands and the feet. The course was characterised by relapses and fever, with a good deal of local pain. The axillary glands were enlarged, but no splenic enlargement had been found. Radiography showed no changes in the bones. The appearance of the fingers was that of rheumatoid arthritis.

Early Osteomyelitis or Epiphysitis of the Upper End of the Femur in a Boy aged 9 Years was shown by Dr. Edmund Cautley. He was admitted into hospital on December the 16th, 1904, as a case of rheumatic fever. The symptoms were pyrexia, leucocytosis, anæmia, unduly frequent pulse, and pain and swelling in the upper part of the left thigh. An exploratory incision on December the 28th was negative in result. On January the 27th a skiagram showed definite changes in the neck and the upper part of the shaft and in both trochanters. On February the 8th pus appeared under the scar of the exploratory incision, and on re-opening the wound a probe passed down to bare bone. Dr. Cautley regarded the case as one of mild osteomyelitis, or starting as an epiphysitis of the great trochanter.

Mr. Douglas Drew advised further exploration.

A Case of Syphilitic Arthritis of the Right Knee in a Boy aged 7 Years, forming a painless swelling of two years' duration, which had markedly decreased under antisyphilitic treatment, was shown by Mr. Arthur Edmunds.

A Case of Syphilitic Arthritis of Both Knees of One Month's Duration and quite Painless in a Boy aged 12 Years was shown by Dr. G. A. Sutherland. The joints contained free fluid. There was no other evidence of disease. He stated that in his experience drugs had proved of little use and that the affection ran a prolonged course, ending in spontaneous recovery.

A Case of Excision of both Hip-joints for Tuberculous Disease, and one of Acquired Club-foot with marked hereditary Tendency was shown by Mr. Douglas Drew.

A Case of Spastic Diplegia and Optic Atrophy, in a Child, aged 2 Years, was shown by Dr. G. E. C. Pritchard. The head was microcephalic. Labour was difficult and prolonged. Spastic rigidity was almost universal, and almost constant choreiform movements were present in the hands and the arms. Frequent mild fits occurred. The first fit was said to have been on the third day of life. There were no signs of intelligence. He regarded the condition as one of microcephalic congenital idiocy due to arrested or perverted development of the nerve elements.

A Specimen of Congenital Absence of the Gall-Bladder and Bile-Ducts from a Female, aged 8 Months, Jaundiced since Birth, was shown by Dr. Hobhouse (Brighton). The urine contained no bile-salts or pigment. The fæces were white. The liver weighed 8 ounces, and the child 9 pounds at death. There was no marked interlobular cirrhosis.

A Paper on a Case of Interstitial Nephritis with Extensive Renal Retinitis, in a Girl, aged 6 Years, was read by Dr. Hobhouse (Brighton). The eye symptoms appeared two months before death and were very intense. The urine was rather copious, contained a few hyaline casts, and blood for a time. There was no evidence of congenital syphilis, but the child had had scarlet fever at the age of 3 years. The kidneys were exhibited.

Editorial.

ETHYL CHLORIDE—A WORD OF WARNING.

At a recent meeting of the Society of Anæsthetists several fatalities were reported during the administration of ethyl chloride. We published last June a paper read by Mr. Chaldecott before The Society for the Study of Disease in Children on the use of ethyl chloride as a general anæsthetic, in which, after attention had been drawn to the many advantages of the drug, and to the cases for which it was most suitable, it was very clearly laid down that the agent in question is a very powerful anæsthetic and should only, except under circumstances of extreme urgency, be administered to patients who have been properly prepared. Since that time, however, ethyl chloride has attained a very widespread popularity, and, owing doubtless to the ease with which complete anæsthesia may be induced by its use, there is considerable risk of its being employed in a haphazard fashion and in unsuitable cases. We do not suggest that any of the reported fatalities were due to either of these causes, but their occurrence certainly proves that its administration is not by any means free from danger to life.

As suggested at the meeting of the Society of Anæsthetists, there are several precautions which should be observed—(1) the patient should be prepared as for chloroform or ether; (2) care should be taken not to present at first too large a dose; (3) a prop should always be inserted between the teeth; (4) the patient should be allowed to rest for some time after administration, as faintness occasionally supervenes, especially when a large dose has been given; (5) the drug should not be sprayed directly upon the mask close to the patient's face.

There can be no doubt that the introduction of chloride of ethyl as a general anæsthetic is a very important innovation, especially valuable in the case of children, and it would be a matter for regret if the drug were to fall into disrepute through accident caused by disregarding such dangers as must inevitably attend the administration of so powerful and rapid an anæsthetic agent.

Abstracts from Current Literature.

Medicine.

Recurrent vomiting ('*Amer. Journ. Med. Sci.*,' 1904, *vol.* CXXVIII, *p.* 966).—**Irving M. Snow** records five cases in girls between 3 and 10 years of age, and brings forward evidence that the attacks were due to an intermittent hyperchlorhydria. He regards cyclic, periodical, or recurrent vomiting in children as not so rare as is supposed, states that it is relatively easy of diagnosis if the vomit be examined, and holds that in some cases the gastric irritability is due to an intermittent hyperchlorhydria, a secretory neurosis, causing the sudden hypersecretion of free hydrochloric acid and gastric juice. The attacks of vomiting come on suddenly, without any definite exciting cause, are associated with nausea, perhaps a burning pain in the stomach, and sometimes fever. They occur at irregular intervals, last for a few days, and cease suddenly. The child is quite well between the attacks. In four of the cases the fluid vomited was apparently pure gastric juice, containing an access of free hydrochloric acid and mucus. In the fifth case the hyperacidity was due to combined chlorides. The patients all recovered. Marfan has described the affection under the name of "vomiting and acetonuria." He ascribed it to an intoxication, the odour of acetone in the breath and acetonuria being indicative of a toxæmia. Rachford found leucomaines in the urine and believed the condition to be allied to migraine, a kind of lithæmic gastric neurosis. In his cases the recurrent vomiting was replaced by attacks of migraine in adolescence. Migraine is often due to hyperchlorhydria. The disease usually begins in early childhood, from the first to the sixth year. It is most common among nervous, high-strung children of the better classes. Usually they are fed with an excess of caution and there is no evidence of dietetic errors. There is no special predisposing factor. The vomiting may be so severe and prolonged as to endanger life. Often blood is mixed with the ejecta from the violence of the vomiting. Rapid emaciation and grave cardiac weakness result, but recovery takes place quickly except in the worst cases. First attacks are liable to be mistaken for simple acute indigestion, meningitis, appendicitis, or intussusception. Recurrence and rapid recovery in a few days in most cases establish the diagnosis, which can be easily confirmed by examination of the vomit. The acetone odour of the breath is of some value in diagnosis. Inflammatory or irritative lesions of the kidneys have been noted post mortem. The most efficacious treatment appears to be frequent large doses of bicarbonate of soda. In dangerous attacks nutrient enemata, chloral by rectum, and hypodermics of morphia and strychnia may be necessary to tide the patient over a dangerous crisis. Most cases get well. The prognosis as to recurrence is very uncertain, for each attack may prove the last. **B. K. Rachford** (‘*Archives of Pediatrics,*’ *December*, 1904, *vol.* XXI, *p.* 881) contributes a paper on the subject in which he gives a summary of the affection. He states that a family history of migraine or gout is present in nearly every case and attaches much importance to constipation as an etiological factor. He accepts the intoxication theory and holds that incompetency of the liver is an important factor. **H. Batty Shaw** and **R. H. Tribe** (‘*Brit. Med. Journ.,*’ 1905, 1, *p.* 347) report a case in a girl aged 11 years. She had had periodic attacks of severe vomiting, seven in all, since the age of three years. The attacks lasted on and off for a month and caused much wasting and weakness. On admission into hospital she was extremely wasted, weighing only 24½ lbs., listless, and taking no notice of her surroundings. The teeth were carious, the neck and body much pigmented, and the abdomen hollowed. The urine contained a large amount of acetone, and some diacetic and β-oxybutyric acids. Vomiting occurred three or four times a day. She was fed by mouth and rectum, and large doses of bicarbonate of soda, 90-120 grains daily, were given. She gained six pounds in weight in about eight weeks. The pigmentation largely disappeared and the general condition improved. The rectal feeding produced the best result. The writers give an analysis of 55 reported cases. **F. Langmead** (‘*Brit. Med. Journ.,*’ 1905, 1, *p.* 351) reports two cases. One, a girl, was under Dr. D. B. Lees for an attack from which she recovered. She had had four attacks during the previous eight months. Six weeks later she had another attack, passed into a condition like diabetic coma, had general convulsions and died with a temperature of 110° F. The liver was found enlarged and in an advanced state of fatty degeneration. Other changes post mortem were probably due to inanition, fever, and the convulsions. The other case was a boy, aged 6 years, with some mental deficiency. He had had ten to twelve previous attacks. The last was typical but very severe. He recovered. EDMUND CAUTLEY.

Cyclic vomiting (‘*La Clinique Infantile,*’ *February*, 1905).—**Richardière** states the characteristics of this form of vomiting are: crises of vomiting of food; bilious or watery materials, reproducing themselves with variable frequency and without apparent cause, and attended by extreme exhaustion, drawn features, sunken eyes, and retraction of the abdomen. These crises last two or three days to as many weeks, and stop suddenly. The breath has the odour of acetone. The temperature is sometimes raised, and occasionally there is jaundice, with pale stools and bile in the urine, the liver being enlarged. The author considers that the liver plays an important part in the production of these attacks, and that the acetonuria is a symptom of hepatic incompetence. Normally, acetone is a product of tissue disintegration; it passes into the blood to be eliminated, and it is probable that the liver takes a considerable share in this process of elimination or transformation, and a disturbance of the liver function will naturally diminish its capacity in this respect. **Langmead** ('*British Medical Journal*,' *February*, 1905), in reporting two cases, says that acid poisoning occurs there can be but little doubt, but that it is the cause of the vomiting is far from proved. He has found both acetone and diacetic acid in very evident quantities in the urine of several patients during whose illness no vomiting has occurred, and in those in whom this symptom occurred he could never detect the acetonuria first. The very frequency of the presence of these products in the urine is against their ability of themselves to cause a comparatively rare condition, such as is recurrent vomiting. And in diabetes in which acid poisoning often leads to a fatal issue, vomiting is a symptom little in evidence. The probable explanation is to be found in some antecedent condition causing the vomiting, and directly, or indirectly, the acid poisoning.

J. PORTER PARKINSON.

Erythema infectiosum ('*Amer. Journ. Med. Sci.*,' 1905, *vol.* cxxix, *p.* 16).—**H. J. K. Shaw** describes under this name an eruption which was first recognised as a new exanthem by Escherich. It was well described by Tschamer in 1886, under the name "oerliche Rötheln," and by Gumplowicz, in 1891, and under the title "casuistisches und historische über Rötheln." Both these observers regarded the disease as an abortive type of Rötheln. Tobeitz, in 1896, confirmed the observations and conclusions, and it was in the discussion on his paper that Escherich made the first claim that this is a disease *sui generis*. Stricker, of Giessen, in 1899 named the affection "erythema infectiosum," and various epidemics have been described under the name, and as "erythema simplex marginatum" (Feilchenfeld, 1901), "megalerythema epidemicum" (Plachte, 1904), "erythema infectiosum morbilliforme" (Heimann, 1904), and "ein neues als selbständig akannta aküte exanthem" (Pospischill, 1904). It may be defined as a feebly contagious disease, occurring chiefly in children, with slight subjective symptoms, and a maculo-papular rose-red rash, most marked on the cheeks, legs, and outer surface of the arms. It occurs in epidemics, and often follows an outbreak of measles or Rötheln. It is not so contagious as the other exthanthemata. None of the latter confer immunity against an attack. It is most common between 4 and 12 years of age, has occurred at 14 months, and in young adults. It is most frequent in spring and summer. The incubation period is 6 to 14 days. The eruption is the first symptom, or may be preceded by malaise, weakness, and sore throat. The diagnostic feature is the symmetrical rose-red rash on the cheeks, where it first appears. The skin is hot and swollen, but is not sensitive, and does not itch. The whole appearance suggests erysipelas. On the cheeks the rash is confluent with defined, slightly-raised edges, or gradually fading into normal skin. Discrete spots are often seen on the forehead and chin. On the second day it appears on the body, being most marked on the outer surface of the arms and legs. The trunk may be almost free. The rash spreads peripherally. On the extremities it is morbilliform, and not so rose-red as on the face. In many cases it has a lace-work appearance. It may become confluent about the elbow, and is always very well marked over the buttocks. The rash is more macular than papular. Often it is evanescent, reappearing as the result of friction or exposure of the skin to cold. Its duration is 6 to 10 days, and it leaves no staining or marks. The lymph nodes are not enlarged. Tongue may be slightly coated. There is no coryza, cough, or conjunctivitis. The affection is harmless, and there are neither complications nor sequelæ. In appearance, location, and spread of the rash it differs markedly from Rötheln. The appearance of the rash on the arms and legs is very like measles, and may cause momentary confusion. Possibly the so-called recurrent attacks of measles, a secondary rash with atypical symptoms, is really this new disease. From scarlet fever there ought to be no difficulty in diagnosis. Erythema exudatum multiforme begins on the backs of the hands and feet; the rash becomes papular and vesicular; the attack lasts 3 to 4 weeks, and often there are severe symptoms. Pityriasis rosea seldom affects the face, runs a chronic course, and is not contagious. Drug rashes, toxic and dyspeptic erythemas, and those due to severer infections are often similar. In the so-called fourth disease the rash is just like that of scarlet fever, and is often followed by desquamation. In all probability the polymorphous forms of disease described as Rötheln are errors of diagnosis, and true Rötheln has a definite, only slightly variable, symptomatology.

EDMUND CAUTLEY.

The fourth disease (*'Deutsche Med. Wochens.,'* 1904).—**J. Bóhay** gives a short summary of the features supposed to characterise this disease as described by C. Dukes. The eruption is the first symptom, and consists of a pale, rose-red, fine punctiform rash; the symptoms are excessively mild, and there are no sequelæ. The infection lasts only 2 to 3 weeks, and the incubation period is from 1 to 3 weeks. Bóhay points out that the occurrence of this disease may be definitely established if it can be shown that it attacks children who have already suffered from both scarlet fever and rötheln, or that those children who have suffered from it are not protected from either of these two diseases. Bóhay thinks that in time these conclusions will be established, and Filaton described a disease under a different name (rubeola scarlatinosa), which appears to be the same as that described by Dukes, and describes a family of eleven children, of whom three suffered from undoubted scarlet fever; two years later six children who had escaped scarlet fever suffered from fever with a rash similar to that of scarlet fever, and the governess who had previously had scarlet fever was attacked with the same disease. A year later four children who had suffered from this second epidemic of fever developed true scarlet fever. Filaton believes that the six children who were attacked together were affected with "the fourth disease."

J. PORTER PARKINSON.

Atypical cases of scarlet fever (*'Corresp.-Blatt. f. Schweizer Aerzte,' No.* 15, 1904; *'Allgem. Wien. med. Ztg.,' No.* 39, 1904, *p.* 426).—**H. Naegeli** draws attention to the great clinical variations which may occur in an epidemic of scarlet fever. He describes three cases occurring in one family which all ran an atypical course. In one of these cases the rash did not appear until the twelfth day after the onset of the illness.

E. P. BAUMANN (Johannesburg).

Typhoidal insanity in childhood (*'Amer. Journ. Med. Sci.,'* 1905, *vol.* CXXIX, *p.* 326).—**D. L. Edsall** discusses the character and prognosis of typhoidal insanity, and points out that, while some alienists consider that 90 per cent. recover, Clouston states that recovery rarely ensues. A study of the literature yielded over 80 cases. Although the condition is uncommon, it is not rare. The nature of the insanity was: mania, 36; dementia, 26; melancholia, 6; delirium of convalescence with simple delusions or hallucinations, 14; chronic paranoia, 1. The cases were difficult to group. A large proportion of the instances of mania showed a very pronounced element of melancholia. Of the 14 cases during convalescence all recovered. Of the remaining 69, 43 recovered, 3 died, 23 remained insane. Dementias were of much greater prognosis than the other forms of insanity. Edsell points out that these figures are based on the severe cases, and that many milder ones are not reported, and are even overlooked. Hence the prognosis is much better than the above statistics represent. There was an almost entire lack of indication that heredity has any influence on the prognosis. Probably few of the cases were accurately investigated in this direction. Dementia appears to follow typhoid fever in children more commonly than in adults. Age of patients: from two and a half to five years, 14; 6-10 years, 26; 11-15 years, 27. These figures do not bear out the statement so often made that mental derangements are more common in the later years of childhood than in the earlier. There were 39 boys to 25 girls. Mania occurred in 21 boys, and only in 7 girls. In 54 out of 65 cases the symptoms were said to have arisen during convalescence, in 11 during the course of the disease. Probably many more began in the acute stages, though not recognised until later. Delusions are usually delusions of grandeur; hallucinations are often terrifying. Care must be taken not to ascribe home-sickness in hospital patients to melancholia, or to mistake a vivid imagination for a case of delusional insanity. The writer is in favour of liberal feeding in these cases, as some, in his opinion, are due to malnutrition. He is also in favour of home treatment for melancholia. EDMUND CAUTLEY.

Some complications of varicella ('*Riv. di Clin. Pédiat.*,' *November*, 1904).—**G. Caccia**, who had a case of encephalitis secondary to chickenpox under his care at the children's clinic at Florence, states that there are not uncommonly met with, as complications, cutaneous gangrene, laryngitis, broncho-pneumonia, and acute miliary tuberculosis. Of nervous complications, both convulsions and loss of consciousness have been observed prior to the eruption. A case of right branchial monoplegia was described by G. Rossi ('Gaz. degli Osped.,' n. 43, 1903), and chorea, by several observers. Among rarer nervous manifestations he mentions internal hæmorrhagic pachymeningitis, peripheral neuritis, and external ophthalmoplegia of nuclear origin. The author's case was a male child, aged 3 years, admitted into hospital with a copious eruption of varicella and little constitutional disturbance. Five days later he suddenly became unable to assume the erect posture, a kind of tremor affected the whole body, accentuated by voluntary movements and most marked in the right upper extremity. The attack was ushered in by repeated vomiting for two days, and his speech became slow, although not typically "scanning." There was paresis of the right leg, but no atrophy or disturbance of sensation; muscular tone somewhat in excess; clonus and increased patellar reflex; Babinski's sign present; electrical reaction normal. Lumbar puncture was practised, and the fluid withdrawn, containing 0·3 per cent. albumin, was sterile. At the end of four weeks all these symptoms had disappeared. As regards the diagnosis, peripheral neuritis was excluded by the affection of speech; infantile paralysis by the absence of muscular wasting, the exaggeration of reflexes, and by the electrical reaction; meningitis by the nature of the cerebral spinal fluid; and the author considers that a diagnosis of encephalitis affecting the left cerebral hemisphere is established. VINCENT DICKINSON.

Painful paralysis in infants (*L'Echo Médical du Nord, January* 29, 1905).—**Bossan.**—A case is described of a child aged 2½ years, whose mother stumbled while holding it by the hand. It cried out, the arm fell to the side useless with the hand pronated; there was no deformity, ecchymosis, or sign of inflammation; there was great pain on movement. Recovery was complete in five days. A second case was a child aged 4 years, due to lifting it from bed, who recovered in a few days. Diagnosis: There is no loss of sensation; there is pain on movement; when the elbow is lifted the hand drops as if there was paralysis of the extensors. The cause is probably a stretching of the nerve-fibres, but this has never been seen post mortem. T. P. BEDDOES.

Pathology.

Hypertrophy of the thymus ('*Revue Mensuelle des Maladies de l'Enfance,' February*, 1905).—**A. B. Morfan.**—An only child, aged 15 months, was admitted for dyspnœa; intubation, then tracheotomy was adopted, antidiphtheritic serum injected; no diphtheritic bacilli were found. The temperature was 104·3° F.; râles were heard at the base of the right lung. The tracheotomy tube was removed, when the temperature fell after internal treatment with ergotine and strychnine, and moist compresses with mustard externally. Milk returned through the tracheal wound; a long tube gave more relief than a short one or a tracheotomy cannula. There was inspiratory and expiratory wheezing which had existed since birth, being increased when the child had a cold or was in a horizontal position. There was no lesion of any organ detected, but general health was always bad. Patient was discharged in about a month. Four days before there was a pemphigoid eruption of discrete bullæ, which quickly disappeared. Later the patient was admitted moribund. The larynx was normal. The hypertrophied thymus protruded above the sternum and pressed on the trachea; it was deep red in colour, the lymphoid tissue increased in amount, the trabeculæ thickened, and containing engorged veins. In the spleen there was congestion and hæmorrhages, infiltration and swelling of the corpuscles of Malpighi, indicating early gummata; the arteries were characteristically syphilitic, with some amyloid degeneration of the external coat.

T. P. BEDDOES.

A case of myatonia congenita ('*University of Penna. Medical Bulletin,' January*, 1905).—**William G. Spiller** abstracts Oppenheim's article on this disease. The salient points are: A congenital disease, although the parents often do not notice it until the child is a year old. The limbs, especially the lower, are flaccid and motionless, but are not paralysed, since on careful observation weak voluntary contractions may be noted. The flaccidity is so great that the joints are abnormally movable. Muscles of the neck and trunk usually escape, but the intercostal muscles are affected, whilst the diaphragm remains normal. The diseased muscles react weakly to electric stimulus, but Oppenheim does not think that the disease bears any relation to progressive muscular dystrophy. The case which came under the author's care was a male aged 22 months. It was breast-fed until the date of admission to the hospital. Nothing abnormal was observed by the parents until he was 5 months old, when he did not seem to take notice of things as the normal child does. The anterior fontanelle closed about the fifth month. Never been able to hold anything in his hands. Weakness has not increased since birth. Optic nerves normal. On admission, the child is fairly well developed for a baby of 20 months. The muscles do not appear to be wasted, and the upper and lower limbs are of good size, but the flesh is soft and flabby. The limbs are moved voluntarily and at all joints, and there is merely weakness present. The patellar reflex and Achilles tendon reflex are not obtained on either side, and any attempt to obtain the patellar reflex causes the child to draw up the lower limb with considerable power, although not normally. On pricking a limb it is withdrawn. The abdominal walls are atonic, which probably accounts for the marked constipation. The hypotonicity of the limbs can be demonstrated by placing the child's foot behind its head with the thigh resting against its trunk, without causing any discomfort. The muscles of the limbs react to the faradic current. Child refused to take food, and was fed nasally. At the autopsy, which was carried out with great care and in detail, the nerves of the limbs were found to be normal; no evidence of degeneration was found in the spinal cord. Muscles from the sole of the foot, from the back of trunk, and other parts were striking owing to the large amount of fatty connective tissue and on account of the considerable increase in the nuclei of the connective tissue. The fibres were found to be small; the transverse striations well preserved. The author therefore concludes that the disease is a disease of the muscles, and that one may hope for improvement at least in many cases, and for this reason it is important to distinguish it from amaurotic family idiocy, which is necessarily fatal. OTTO GRÜNBAUM.

On the pathogeny of certain diphtheritic paralyses (*'Revue Mensuelle des Maladies de l'Enfance,' September*, 1904, *p.* 391). —**M. L. Rist** describes a case of paralysis following severe faucial diphtheria in a girl aged 17 months. The case was treated by two successive doses of 40 c.c. and 60 c.c. of Roux' serum and recovery was rapid, but on the twentieth day paralysis of the palate and of the lower limbs occurred. The next day erysipelas of the nose developed and the pulse became weak, and on the following day the child died of syncope. Post mortem the brain and spinal cord showed no macroscopical lesions, but apparently no microscopical examination was made. The author calls attention to the enormous dose of serum given at a comparatively early stage of the disease (third and fifth days), and asks why it is that an early dose of antitoxin, sufficient to cure a severe angina, is powerless to prevent the appearance of subsequent paralysis. He does not discuss the anatomical side of the question, nor the cause of the early paralysis, but only the paralysis which appears eight, fifteen, or even thirty or forty days after the subsidence of the acute process. These examples occur in cases characterised by a high degree of toxicity and by albuminuria, perhaps also by an extensive false membrane. In the experimental diphtheritic intoxication of the guinea-pig the occurrence of paralysis coincides with the general symptoms of intoxication, but that referred to occurs in man at the time when there is no toxin in the circulating blood. It has a definite clinical course, which cannot be reproduced in animals, these being affected by an acute ascending paralysis. Therefore we have no right to apply to the one conclusions derived from a study of the other (**Babounein**). **Mya** points out that in some cases in man there is rather a state of "general muscular asthenia" than of true paralysis, the clinical picture reproducing exactly that of the "Erb-Goldflam disease." As to the pathogeny, the author dismisses the theory that these paralyses are due to a secondary (streptococcal or other) infection, because this is not consistent with their specific character. The antidiphtheritic serum is, of course, antitoxic only; it is not antibacterial. Is it possible that these late paralyses are due to the direct action on the nervous centres of colonies of diphtheria bacilli, which have remained after the termination of the disease? This view has been held, but the experimental results on which it is based have been very generally contested.

Babounein has produced, by the inoculation of small doses of toxin, paralyses beginning in the neighbourhood of the site of injection. He has shown also by injecting the toxin into the sciatic nerve, that the toxin of diphtheria, like that of tetanus, can travel along the nerves towards the spinal cord. But the paralysis produced in both these ways could be prevented by the preventive immunisation of the animal, and therefore cannot be connected with the late paralyses occurring in man.

Luisada and **Pacchioni** produced functional alterations and anatomical lesions by injecting diphtheria toxin directly into the nervous centres of immunised dogs. But this proves nothing, for the nerve-cell itself is not immunised against the toxin. In an immunised animal the toxin probably is rendered inactive before reaching the nervous centres, as has been shown in the case of tetanus. **Mya** doubts whether the soluble toxin ever reaches the nervous centres, and proposes two hypotheses to explain the effect on these. The first is not supported by facts. He supposes that the diphtheria toxin produces, at its seat of origin, a "series of catalytic actions," which gradually extend upwards to the centres. The second is that there may be, in addition to the soluble toxin, an endogenous toxin, acting only on direct contact with the nervous system of the man in whom it is found and inactive when injected subcutaneously or intra-peritoneally into the guinea-pig. The author has prepared an emulsion of the bodies of diphtheria bacilli, freed from the soluble toxin, and injected it into the veins of rabbits and the peritoneum of guinea-pigs. This produced, after considerable delay (thirteen or fourteen days in some cases), paralyses which were variable and incomplete, thus resembling those seen in man, and this occurred in spite of the injection of considerable preventive doses of antitoxic serum. The author concludes that the bodies of diphtheria bacilli must contain an endotoxin which is not neutralised by diphtheria antitoxin, and he points out that the symptoms produced by this endotoxin are precisely those which, in human diphtheria, are not prevented by the use of antitoxin. The delay in their appearance is ascribed to their slow diffusibility, and they may perhaps travel upwards along the nerves.

S. H. Bown.

Heart failure in acute diphtheritic toxæmia ('*Lancet*,' *February* 4, 1905).—**Bolton,** in summing up some very important statements which he makes in a paper, remarks that death in acute diphtheritic toxæmia is due to primary heart failure, accounted for by extensive fatty cardiac degeneration and acute degeneration in the motor nucleus of the vagus. The changes in the vagus nucleus probably produce both irritative and paralytic effects on different portions of the heart at the same time. The probability is that irregularity of action would be the prominent feature, which would be subject to great degrees of variation, while in some cases slow pulse and in others rapid pulse would predominate. Such a lesion would also be likely to lead to vomiting. The cardiac dilatation is due to weakness of the heart-wall The irregular pulse and fatal syncope and acute diphtheritic toxæmia are therefore due to disturbed innervation of an acutely degenerated heart. The heart failure exhibited in the acute stage by patients who recover is probably the result of similar, though less extensive, changes.

JAMES BURNET (Edinburgh).

Supra-renal tumour and precocious sexual development (‘*Archives of Pediatrics,*’ 1903, *vol.* XX. *p.* 933). **D. J. Milton Miller** showed a child at a meeting of the Philadelphia Pediatric Society as “A case of Abdominal Tumour (Sarcoma of Kidney?) and Pseudohermaphroditism in a child of Two Years.” The subsequent history showed increasing dyspnœa, marked congestion of the face, profuse perspiration, luxuriant growth of pubic hair, and great abdominal enlargement. Death resulted from exhaustion eleven months later, and specimens were shown before the same Society by **C. T. White** and **V. Nisbet** (‘*Archives of Pediatrics,*’ 1904, *vol.* XXI. *p.* 943). A large tumour was found rising in the right suprarenal gland, with metastases in the liver, mesenteric glands, and right lung. Microscopically, a hypernephroma. The external genitals were moderately hypertrophied. The pubic region was covered with coarse hair. The labia were hypertrophied, and the labia minora projected from the vulva. The clitoris measured 4 c.m., and the prepuce could be retracted. The ovaries were enlarged There was no bronzing of the skin. EDMUND CAUTLEY.

Non-traumatic cerebral hæmorrhage in a child aged 10 years (‘*Lancet,*’ *February* 4, 1905).—**Hugh Taylor** records a case of this very rare condition. The child had been apparently perfectly well all day, and about 10 p.m. suddenly put her hand to her head exclaiming, “Oh, my head!” She then gave a cry, fell down and became very sick. On lifting her up her parents found that “she had lost the use of her limbs.” When seen an hour later, she was semi-comatose, with dilated and fixed pupils. The temperature was 97·8° F. and the pulse could not be counted. The mouth was drawn to the right side and the head inclined to the right shoulder. The left leg was completely paralysed, while the left arm was only partially affected. At 4 a.m. she tried to turn over, made an abortive attempt at vomiting, and died quietly. The father is described as being healthy, the mother anæmic and rheumatic, with a large family, one female member of which suffers from constantly recurring tonsillitis. Necropsy revealed a hæmorrhage which, starting from some vessel in the corpus striatum or optic thalamus, had literally ploughed its way into the right lateral ventricle, the resulting clot completely filling the cavity. All the other organs were apparently quite healthy. May the origin of this condition not have been some vascular change in the cerebral vessels resulting from congenital syphilis? J. B.

JAMES BURNET (Edinburgh).

Diphtheria and tetanus (‘*Revue Mensuelle des Maladies de l'Enfance,*’ *January*, 1905).—**M. L. Baboneix.**—Tetanus may appear at the onset or during the course of diphtheria, or there may be no sign of diphtheria till the tetanic convulsions appear. The author quotes the following cases: **Tschlenoff** (‘*Corresp. Bl. f. Schw. Aerzte.*,’ *July* 15, 1891).—(1) A child aged 12 years, ill some days, had pain in the neck and back, later clonic contractions of the vertebral muscles, then spasm of the masseters and arms. No albuminuria. No post mortem was made. A child in the same house died a few days before this patient was first seen. **Bitot** (“Pseudo-tetanus diphterie,” '*Revue de Gynæcologie,' etc.*, Bordeaux, 1903).—(2) A child treated with Behring's anti-tetanic serum developed a scarlatiniform rash, and was transferred to the scarlatina ward, where a child contracted diphtheria. In the first ward an outbreak of diphtheria lasted a month. As soon as the mouth of the original patient could be examined, Klebs' bacillus was found, later paralysis of the legs and ocular muscles, with suppression of reflexes of the soft palate. (3) A lad aged 4½ years, in apparent good health, suddenly had clonic convulsions. Cultures of the saliva showed diphtheria bacilli, and he rapidly recovered after antidiphtheritic serum. (4) **Brunet** ('*Thesis*,' Bordeaux, 1902).—A baby with trismus; in the umbilical pus the bacillus of Nicolaier was found having all the reactions of the bacillus of Loeffler. The post mortem a few days later only showed a little cerebro-medullary congestion. (5) **Bitot**.—A girl, aged 26 days, had tetanus since eight days old. The umbilicus and conjunctivæ secreted pus containing Loeffler's bacillus. Six injections of antidiphtheritic serum ended the convulsions and caused complete cure. Tetanic convulsions supervening in cases already diagnosed as diphtheria are more numerous (**Box**, '*St. Thomas's Hospital Reports*,' 1901; **Irving Snow**, '*Amer. Journ. Med. Sci.*,' Dec., 1902). In other cases contractures occurred in patients under treatment for diphtheria and measles or diphtheria and scarlatina. **Baginski** ("Symptomes tetanique dans la diphthérie,' '*Deutsche Med. Wochenschr.*,' 1893).—Inoculation investigations of diphtheria show that in dogs muscular contractions, rigidity of hind limbs, injections into the brain have caused motor trouble with rigidity of the neck. Are the quoted cases instances of post-diphtheritic tetanus or of diphtheritic pseudo-tetanus; do they support the theory that various bacilli cause tetanic convulsions as happens with the pneumococcus? As a practical point in cases where the diagnosis of tetanus is not certain, it is desirable to look for the diphtheria bacillus in the umbilical, buccal, or conjunctival secretion; if it is found once in a hundred or even a thousand cases the patient will be saved provided it is found sufficiently early. T. P. Beddoes.

Therapeutics.

Tetanus cured by injections of serum ('*Med. Correspond. Blatt.*,' *October*, 15, 1904, *p.* 880).—**R. J. Beck** describes a case of tetanus which occurred subsequently to an injury in a boy aged 12 years. The onset of the disease was noted on the tenth day after the injury, and typical symptoms such as trismus and pyrexia soon made their appearance. Warm baths, pilocarpin, chloral hydrate, and opium having been employed with no results, an injection was made on the fifth day of 10 cm. of the antitetanus serum. A temporary improvement instantly took place, but in a few hours the condition had again grown worse, and a second injection was undertaken. This time the improvement was still more marked, to be followed a few days later by a relapse, which necessitated a third injection. The result on this occasion was not so satisfactory, but a week later a fourth injection was undertaken, after which the condition entirely subsided. In view of the severity of the attack and the failure of all other means employed, the writer believes that the successful issue in this case must be ascribed to the action of the serum.

E. P. Baumann (Johannesburg).

Therapeutics of protylin ('*Deut. Aerzte Ztg.*,' 1904, *No.* 11, *p.* 266).—**F. Doon** discusses the use of phosphorus in the treatment of disease. He considers it of great importance and considers that in protylin we possess a preparation of phosphorus of proved value. Protylin is a synthetic product and represents a combination of phosphorus and albumen. It is also made up with iron and the bromides. The writer has tested its value by experiments on animals, and quotes the observations of others upon its efficiency in the treatment of anæmias and the neuroses. He has himself administered the drug in a number of cases of rickets and scrofula. In the treatment condition he used the iron preparation of protylin. The results were altogether excellent. E. P. Baumann (Johannesburg)

Deaths in anæsthesia in childhood ('*Clinical Journal*,' *February* 1, 1905).—**Blumfeld**, in a paper on the above subject, read before the Society for the Study of Disease in Children, excludes all cases in which surgical shock or the previous serious condition of the patient contributed to the fatal end, and limits his remarks to cases in which the child's general health was apparently quite sound. These deaths are in most instances preventable. In five years (1899–1903) there were registered fifty-nine deaths from chloroform in children under 5 years of age only. There is no class of case where a large experience is more necessary than in the case of infants; and in no kind of subject is the difficulty of exactly estimating the patient's condition greater, nor is there any in which, when a serious operation is to be performed, the observation and skill of the anæsthetist is more severely taxed. Death may take place at one of three periods: (1) Before true anæsthesia is established or the operation begun. Exact explanation of this is doubtful. Two theories (*a*) vagus inhibition of the heart (*b*) temporary respiratory spasm leading to dilatation of right side of heart, imperfect elimination of chloroform from the lungs and poisoning of the heart muscle by chloroform. These deaths are terribly sudden and occur only in the case of chloroform, and it is questionable whether some are not due to fatal syncope from mental emotion; and yet, if so, why do not similar deaths occur when ether or N_2O is used? (2) During complete anæsthesia, while the operation is in progress, but is not responsible for the fatality. These deaths are, strictly speaking, never quite sudden; their apparent suddenness is due to the gradual failure of respiration or pulse not being appreciated till the moment of actual cessation; these cases should never occur at all and are due to direct toxic effect on the vital centres. (3) After withdrawal of the anæsthetic, usually the result of the inhalation of vomited matter, while still under the influence of the drug. Two simple conclusions are to be drawn from the above: (*a*) Chloroform is not *the only* anæsthetic suitable for children; (*b*) in operations such as circumcision, etc., when complete unconsciousness has once been obtained, the anæsthesia should afterwards be very light indeed. Alec. H. Brewer.

Bronchial asthma ('*Archives of Pediatrics*,' *December*, 1904, *vol.* XXI, *p.* 905).—**L. E. La Fetra** states that he has seen 43 cases of asthma in infants and young children within two years. Of these 11 were under one year, symptoms in 3 cases appearing at birth. In the second year of life were 8 cases. Abnormalities of development were present in several instances, especially where the symptoms had begun early in life. In nearly half adenoids were present. In two thirds the attacks were preceded by respiratory affections, usually bronchitis. They were worst at night, except in two cases, and generally worse in winter. Wheezing, whistling breathing and dyspnœa occur as in adults; recession of soft parts of the chest in infants; respirations, 40–80; sometimes cyanosis. Later, sibilant râles are replaced by moist ones, and the short, dry cough becomes looser. The blood showed an eosinophilia of 6–18 per cent., greatest at the height of the attack. The temperature is rarely above normal, but may rise 2°–3° in infants. The affection may be mistaken for fine bronchitis, or an early broncho-pneumonia. Diagnostic features are the eosinophilia, low temperature, perhaps an associated gastric indigestion, urticaria or attacks of sneezing, and speedy recovery with later recurrences. Attacks, though uncomplicated, may prove fatal in very young infants. The two theories of causation are discussed: (1) spasmodic contraction of the muscle-fibres of the smaller and medium-sized bronchial tubes; (2) vasomotor tumefaction, turgescence or paresis; a sort of angioneurotic œdema or urticaria of the bronchial mucous membrane. Most of the cases were ascribed to the first, a few to the second cause. Exciting causes were difficult to discover. Prophylactic treatment must be directed mainly to prevention of bronchitis and the removal of adenoids and enlarged tonsils. Other local troubles about nose and throat must be attended to. The use of an alkaline saline solution for the nose, night and morning, is recommended. The possibilities of a dietetic cause or of attacks being due to vegetable or animal emanations must be remembered. Constitutional treatment by high, dry climates in winter, cod-liver oil, and other drugs, is necessary. The iodides are the most useful drugs for prolonged cases. Dunbar's pollantin, or other hay-fever antitoxins may be useful if there is hay asthma. For the attack give inhalations of creasote, 20 drops to the pint of water, in a croup-kettle, for infants. Nitrate papers, with or without stramonium, and the various proprietary "cures" are too irritating for infants, but efficient for older children. If the dyspnœa is dangerous, chloroform may be needed. Some physicians recommend amyl nitrite and pyridin. The latter is uncertain in its action. As soon as the infant can swallow it should be given tartar emetic $\frac{1}{100}$ gr., ipecac. $\frac{1}{20}$ gr., nitro-glycerin $\frac{1}{100}$ gr. every half-hour until relief is obtained. This is especially useful in the cases resembling bronchitis of the finer tubes. Atropin in doses of $\frac{1}{2000}$ gr. every two hours until the face flushes often does good. It can be continued two or three times a day for a few days after the attack. If there is gastric trouble, produce vomiting by a dose of syrup of ipecac. For long-standing cases a mixture of pot. iod. gr. xx, morphin. sulph. gr. $\frac{1}{3}$, tinct. belladon. ℳxx, sp. etheris co. ʒiij, aquæ ad ℥ij, is good, given in drachm doses every three or four hours. Except in very young infants the outlook depends upon the duration and the frequency of the attacks. EDMUND CAUTLEY.

Otology, Laryngology and Rhinology.

Subglottic œdema, infectious and obstructive (*'Archives Internat. de Laryngologie, d'Otologie, et de Rhinologie,' July—August*, 1904).—**Deguy** and **E. Didot.** A child, aged 19 months, was admitted into the hospital for diphtheria. She had suffered from no previous illness. The mother had tracheotomy performed when 4 years of age. There was at the present time no appreciable interference with her respiration, and there was no sign of tubercle. She was slightly collapsed for eight hours, and it was only apparent that the respiratory tract was involved in twenty-four hours. The difficulty of respiration became progressively worse during the course of the day and night. The child coughed, but there was no hoarseness, and the voice always remained clear. She took the breast on several occasions, but did not vomit. At the time when she was admitted into the hospital the signs of dyspnœa were marked. At each inspiration substernal depression was produced, and also a depression in the subclavicular and epigastric regions. The straining, however, was not very violent. The expansion of the thorax was incomplete, expiration was made without any effort; there was nothing in the chest. The throat was normal; no exudation. Bacteriological examination was negative, from the point of view of diphtheria. The dyspnœa increased in intensity, and intubation was performed. At the moment of the performance of this small operation the superior orifice of the larynx was noticed to be œdematous, as were also the surrounding parts. After the intubation the dyspnœa persisted, but there was not any appreciable diminution in the difficulty of inspiration. Indeed it became accentuated to such a degree that within a quarter of an hour asphyxia appeared to be imminent, and tracheotomy was necessary. In the meantime, however, the child had coughed up the tube without its having been perceived. It might have been owing to this that the dyspnœa was rapidly aggravated by closure of the glottis, but it is not possible to be certain of this. However this may be, tracheotomy was performed immediately, without there being time for the ordinary precautions. Dyspnœa disappeared, and the infant was much better. She, however, died three days later, becoming cyanosed shortly before death. At the autopsy, in addition to the other lesions, it was found that the mucous membrane of the larynx and of the upper part of the trachea was pale, and partly œdematous, particularly in the region of the false vocal cords, and in the aryteno-epiglottic folds. The tracheo-bronchial mucous membrane was engorged, and was covered by a whitish membrane, adherent, non-fibrinous, and consisting of inspissated pus, while there were some lacerations in the region of the tracheotomy tube. This appearance of the mucous membrane extended into the bronchi: the mucous membrane of the bronchi was red, and the exudation extended into all the branches. A careful examination of cultures taken from the blood showed cocci, many groups of which had Brownian movements. The colonies were not stained by Gram's method. The grouping of the colonies on gelatin was that of the staphylococcus. A rabbit was inoculated with the culture, and died eighteen hours later. Its pericardium was found distended by sero-fibrinous fluid, which coagulated rapidly, and there were various lesions in all the other organs. A second rabbit, inoculated with a culture from the serum of the first, died in twenty-one hours. The opinion of the writers was that they had found a particularly virulent variety of the Staphylococcus aureus, which was the active agent in producing the lesions in the child. RICHARD LAKE.

Torticollis as a post-operative condition after the removal of adenoids ('*Archiv. Internat. de Laryngol.,*' *January–February*, 1905).—**G. Ferrari.** After a brief review of the literature on the subject, the following cases are quoted: *Case* 1.—A child, aged 12 years, the subject of frequent attacks of bilateral middle-ear suppuration. The hearing power was fair, but the patient suffered from pains in the neck. Adenoid vegetations were present, together with enlargement of the turbinate bodies. The adenoids were removed under local anæsthesia, by means of cocaine and adrenalin. The operation, however, was not completed, and some days subsequently the naso-pharynx was completely freed from growth under general anæsthesia. Immediately after the operation the temperature rose to 39·7° C.; and there was also cephalalgia, loss of appetite, dysphagia, insomnia, and spasmodic contraction of the muscles of the back of the neck and of the left sterno-mastoid. The fever disappeared completely at the end of a week, and the patient gradually recovered from the torticollis. The treatment consisted in the administration of a large dose of aspirin, cold compresses to the neck, and gargles of salicylic acid. *Case* 2.—That of a boy, aged 8 years, who had an operation for the removal of adenoids performed under local anæsthesia. During the night following the operation the temperature rose to 38° C. On the next day the child complained of a heavy feeling, and of discomfort on the left side of the neck. The father discovered some enlargement of the glands on that side. The child was kept in bed, but took nourishment freely. Thirty-eight hours after the operation rigidity of the neck supervened, together with inflammation on the right side. There was acute pain on the left side of the neck, and along the vertebral column. There was no fever, and the child was perfectly happy, but he had a certain amount of pain in swallowing, and the faucial tonsils were more swollen than usual. Cold compresses were applied to the neck, and the patient soon recovered.

RICHARD LAKE.

"**Congenital stridor**" ('*Arch. Internat. de Laryngol., d'Otol., et de Rhinol.,*' *January–February*, 1905).—**F. Massei,** the author, briefly alludes to the views of previous writers on this subject. He then considers, first, the characters of the stridor, secondly, the time at which it makes its appearance, and, thirdly, its evolution. The author expresses the opinion that the best method of making an absolutely correct diagnosis consists in studying the special character of the sound produced by respiration. The stridor may appear on the day of birth, several days, or even a fortnight, subsequently. Most writers state that the condition persists from eight to twelve months, but spontaneous cures have been recorded. Professor Massei says that in these cases there undoubtedly exists a congenital malformation of the larynx, limited to the vestibular region, a vicious formation of the laryngeal orifice, which produces the special sound known as congenital stridor. Laryngo-tracheal and tracho-bronchial catarrh exaggerate the respiratory embarrassment, producing cyanosis, cough, and asphyxia. In children the nervous system influences the stridor. The author appends a series of eleven cases of this affection. RICHARD LAKE.

Mastoid operations ('*Amer. Journ. Med. Sci.,*' 1905, *vol.* CXXIX, *p.* 87).—**Hill Hastings** summarises data from 281 consecutive cases out of 447 patients (one fifth children) admitted into hospital. Diplococci and streptococci were found in the aural pus before operation in 49, streptococci in 38, pneumococci in 37, and a mixed infection in 43. In 2 the bacillus of influenza was found, and in 2 the spirillum of Vincent. In the mastoid pus streptococci were found in 35 and pneumococci in 20 out of 69 examined. Pneumococcal infections were found in the less virulent. Mastoid swelling was present in 100 out of 447 cases, and in 72 of these subperiosteal pus was found at operation. In 28 the swelling was due to œdema. Of the 72 cases 56 were children, and in them the swelling was one of the earliest signs of mastoiditis. Tenderness was most marked over the antrum and the tip in 84, solely over the antrum in 3, solely at the tip in 8. Of 281 cases seeking operation 37 had post-auricular fistulæ; 30 due to former mastoid operations, and of these 27 were children; 7 due to rupture of subperiosteal abscess. In 7 cases an abscess had developed under the scar of a former operation. In the acute cases the membrana tympani was beefy-red and bulging, with or without perforation. In 2 only it was not inflamed, though pus was present within the mastoid. In over half the cases temperature was below 100° F., and in only 13 was it over 102° F. on admission. Six out of 167 cases treated by paracentesis and irrigation, with ice and leeches to the mastoid, returned for operation. All were adults. Of the 281 operations, 164 were mastoids for acute mastoiditis following acute suppurative otitis media; 25 were radical operations, secondary to former unsuccessful mastoid ones; 48 were radical ones for curing a chronic ear. Cholesteatoma was found in 20 chronic cases. In no case was the dura opened accidentally. Epidural abscess was found in 21 cases. Fatal meningitis occurred in 2, both adults. Of 9 cases of sinus thrombosis, only 2 were due to acute otitis media, 7 resulted from extensive mastoiditis following chronic middle-ear suppuration. Four of the 9 got well. Of 90 mastoid operations 62 made a complete recovery, and hearing was restored; 9 died; 7 had a persistent otorrhœa; in 14 the mastoid did not heal, and 9 were again operated on. Average duration of 62 cases was 67 days. In 54 hearing was fully restored. Of the 14 failures 11 were babies. Of the 9 deaths the causes were meningitis 5, sinus thrombosis 1, diabetic coma 1, anaesthesia 1, after leaving hospital 1. Facial paralysis was present in 5 out of 164 acute cases of middle-ear suppuration, and disappeared after operation except in one five months' old baby. In 3 of 6 cases in which the paralysis was due to operation, all babies, it persisted. Of 117 radical operations (Schwartze-Stacke or simple Stacke) 26 gave apparently perfect results; 20 were progressing well when last seen, 2 were failures, and 8 died. The remainder were not followed up. As a rule, no improvement in hearing resulted. Facial paralysis resulted in 20 of the 117 cases; 10 recovered, 4 remained unaltered, 6 were lost sight of. Death resulted in 8: suddenly, on the table, 1; leptomeningitis, 1; extensive mastoiditis due to chronic ear disease in 6. Total mortality: 17 in 281 operations.

Edmund Cautley.

Surgery.

False aneurism of the superior mesenteric artery ('*Lancet*,' *February* 11, 1905).—**Rolleston** and **Whipham** describe a somewhat remarkable case. A female child, aged 3 years, was found to be suffering from wasting, anæmia, rickets, inability to sit up, and a distended abdomen. She was thought to be affected with tuberculous peritonitis. She gradually lost weight, developed head retraction, and one day vomited some fresh blood-clot about the size of a grape, and on two subsequent occasions brought up some dark, discoloured blood. One day she vomited a fresh blood-clot about the size of a walnut, and became collapsed, dying eventually the same evening. The diagnosis of tuberculous peritonitis rested on the swollen abdomen, the diarrhœa, the enlargement of liver and spleen, and the wasting. Crackles at the apices of the lungs, and head retraction suggested more widespread tuberculosis. The hæmatemesis was supposed to be due to some rare condition, such as tuberculous ulceration of stomach or œsophagus. At the necropsy, however, the source of the hæmorrhage was found to be the œsophagus, which contained part of a long black hat-pin, of which two and a half inches of the pointed end projected upwards through a small hole in the wall of the gullet on the right side just above the level of the diaphragm. The head of the pin was gone, and the blunt end after penetrating the œsophagus had passed in front of the aorta, pierced the diaphragm, and had then travelled downwards behind the stomach. Finally, it had turned a little forwards to a point immediately above the duodenum.

where it had perforated the upper wall of the superior mesenteric artery. Between the pancreas and duodenum there was a small false aneurism filled with blood-clot, and of the size of a cherry, in the root of the mesentery. The superior mesenteric vein was partially thrombosed with ante-mortem clot. A direct communication was found to exist between the œsophagus and two abscesses which were present on either side of it. A sinus extended from the abscess on the right side to the first dorsal vertebra. There was no ulceration or other lesion of stomach or intestines. The vomited blood had, therefore, probably tracked up from the aneurism along the course of the pin and entered the alimentary canal at the perforation in the œsophagus.

James Burnet (Edinburgh).

Pyloric stenosis ('*Archives of Pediatrics*,' 1904, *vol.* XXI, *p.* 892).—**H. L. K. Shaw** and **A W. Elting** describe a case of hypertrophic stenosis of the pylorus in an infant aged 16 months at the date of operation. The infant was 11 months old when first seen. Vomiting was supposed to have begun at the fifth or sixth month. At ten months she had an attack of broncho-pneumonia, followed by empyema, for which she was admitted into hospital. She weighed 15 lbs. 8 ozs. The empyema was drained, and the lung symptoms cleared up in five weeks. Vomiting and constipation were persistent. From ten to thirty minutes after each bottle a portion of the food was brought up. Lavage, twice daily for three weeks, had no effect. Gavage was tried for two weeks and proved useless. Changes in diet and drugs were ineffectual. The vomit contained no bile and no free hydrochloric acid or lactic acid. The abdomen was sunken, and the dilated stomach extended to about the level of the umbilicus. The pylorus could not be felt. In five months she lost 54 ounces in weight. An anterior gastro-enterostomy was performed according to Kocher. The pylorus was very firm and thickened for a distance of 2½ cm., and the stenosis was pronounced. The stomach was at least four times its normal size. The operation took 45 minutes. Shortly afterwards she vomited blood. On the following day she retained peptonised milk and barley-water, and vomited some bile during the day. A soft yellow stool resulted from an enema on the seventh day. After four weeks, the vomiting only was occasional. She gained steadily in weight, 10 lbs. in six months, and fifteen months after the operation she weighed 30 lbs., and seemed perfectly well. An epitome of the literature up to August, 1904, yields striking figures. Of infants under twelve months: 66 cases verified post mortem, and 12 fatal cases without autopsies; 39 cases treated by operation; 1 in which an exploratory incision was alone made; and 27 cases diagnosed as pyloric stenosis and ending in recovery. Some of the latter are, no doubt, cases of functional spasm without hypertrophy. The operative results are: pyloroectomy, 1 fatal; gastro-enterostomy, 12 died, 7 cured; pyloroplasty, 3 died, 5 cured; Loreta's operation, 6 died, 5 cured. The authors favour gastro-enterostomy, or pyloroplasty, as the best surgical method. A bibliography is appended. The important feature of the above case is the age of the patient at the time of operation and the size of the pylorus. Edmund Cautley.

Osteogenesis imperfecta or fragilitas ossium ('*Amer. Journ. Med. Sci.*,' 1905, *vol.* CXXIX, *p.* 1).—**P. W. Nathan** publishes details of two cases under his care. The first case on record is one by Berdenave in 1763. The systemic bone diseases of the fœtus are divisible into three classes: (1) those associated with other constitutional anomalies (cretinism, syphilis); (2) chondrodystrophia fœtalis; (3) osteogenesis imperfecta. Most of the instances of the latter disease are premature or stillborn infants, and often it is stated that the disease is incompatible with extra-uterine life. The fœtus has often an obese or œdematous appearance due to its thickened skin and subcutaneous tissues. Sometimes it appears quite normal. The extremities are not stunted, but are bent, deformed, and so brittle that the least violence causes fracture. Intra-uterine fractures are not infrequent. They may be so numerous as to cause a nodular condition of the bone from the resulting callus. False joints are rare. The disease affects all the bones of the body, including the spine and cranium. The bones of the cranium may be entirely unossified. On section, the bones are found exceedingly porous, with thin and defective trabeculæ, and a thin outer periosteal layer of small bone plates or trabeculæ. Calcification is defective. The epiphyseal cartilages are normal. The disease is confined to the shaft, preventing normal development and calcification of osteoid tissue, as soon as the stage of true bone formation is reached. In one of Nathan's cases, a boy aged 4 years, a large head and obesity were noted at birth, and there were deformities of limbs when he came under observation at 16 months of age. Subsequently numerous fractures occurred. The second, a boy aged 17 years, had a large and very softened head at birth. The femur fractured three weeks after birth, and in all he had thirty-five fractures. The fragility became a little less as he got older. The result was a remarkable series of deformities. In both cases the fractures caused very little pain and swelling. The writer holds that most of the cases of so-called idiopathic fragilitas ossium are cases of osteogenesis imperfecta. He give abstracts of several cases, out of fifty-seven recorded as fragilitas ossium, as examples of osteogenesis imperfecta. If his views are accepted it is obvious that cases of osteogenesis imperfecta may live to maturity. The fragility diminishes but does not disappear as age advances. Union takes place readily. The general health is unimpaired. Osteomalacia is easily distinguished from this disease, for it does not begin until after puberty. In some instances fragility of the bones is not congenital, coming on about puberty. There is no known etiology. An hereditary tendency has been noted in some cases. **W. D. Harmer** showed as a case of fragilitas ossium at St. Bartholomew's Hospital ('*St. Bart's. Hosp. Journ.*,' 1905, *p.* 81), a girl, aged 5 years, who had sustained four fractures of right femur, two of left femur, and one of left humerus during the previous three years. There was a family history of fractures—in her only brother, two; mother, two; maternal uncle, three; another uncle, four; aunt, three; and maternal grandmother, four. EDMUND CAUTLEY.

Ophthalmology.

Amaurotic family idiocy ('*Amer. Journ. Med. Sci.*,' 1905, *vol.* CXXIX, *p.* 22).—**J. H. McKee** reports a case in a Gentile boy under observation from the age of 1 year until death, at 2 years 5 months. When first seen he was fat, flabby, rachitic, and unable to support head, sit up, or stand. At 18 months the mother reported that she thought he was blind and that he did not use his hands for grasping, etc. The limbs were spastic. Left pupil widely dilated and irresponsive to light; right pupil moderately dilated and responsive. Complete blindness. Characteristic fundus changes. Hyperacusis. Aphasia. Mental impairment was marked but was not sufficiently apparent in the early months of life to attract notice. A child born subsequently was unaffected. The disease is essentially one of early infancy, beginning between the second and tenth month and ending fatally from marasmus in the second year. It is most common in the Semitic race. It has been ascribed to an arrest of development of nerve-cells and, possibly, white fibres (Sachs and Paterson) or to a degenerative process (Kingson, Russell, and Hirsch). The eyes were examined and reported on by **M. Buchanan** (*Ibid., p.* 31) and histologically by **E. A. Shumway** and **M. Buchanan** (*Ibid., p.* 35). The macular region in each eye showed the pathognomonic condition, a red spot in the macula with a surrounding white zone. The discs were atrophic and bluish-white. The vessels, especially the arteries, were reduced in size. Sections showed the average size of the ganglion cell to be increased and the shape to be more globular than normal. The cells are much degenerated. The optic nerve showed simple degeneration. The changes in the ganglion cells explain the appearance at the macula, for at the fovea centralis there are no such cells and the red choroid is visible whereas at the margins of the fovea the ganglion layer is 6–10 cells deep. These ganglion cells in the retina are genetically a portion of the central nervous system. **W. G. Spiller** (*Ibid., p.* 40) reports on the pathological findings of the same case. Death was due to extensive catarrhal pneumonia. The subarachnoid fluid was in excess, the meningeal vessels intensely injected, the brain moist and heavy. The nerve-cells throughout the spinal cord were much enlarged, and the chromophilic elements were absent or granular. Most of the dendritic processes of the cells had disappeared. So too were apparently all the nerve-cells degenerated. Spiller could not find a single normal one in the whole nervous system. The Marchi method showed intense alteration of the white matter in the brain and, to a less extent, in the cord. The writer insists on the extraordinary cellular alteration as a common condition in the disease, resembling that found by Hirsch and Sachs. The internal plantar nerve showed distinct degeneration.

EDMUND CAUTLEY.

Correspondence.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

SIR,—I forward you an article entitled "Baby Farming—New Style" "*by an M.D.*," which appeared in the 'Pall Mall Gazette' of March 8th, and which appears to me to contain one or two extraordinary assertions, *e. g.* that "little patients are sent" (to the Infants' Hospital) "from all the general hospitals, where it is beginning to be discovered that the subject" (presumably infant feeding) "is one for close and expert attention, *which they cannot supply*" (italics mine). Also "that the" (Infants' Health) "Society has undertaken a piece of work which neither the general hospitals nor the special hospitals for children *have yet attempted to tackle*" (italics mine). Has it really come to this, viz. that when an infant suffering from malnutrition is brought to one of the general hospitals or special hospitals for children in London, the physician whose advice is sought says: "Ah! this is a case we cannot properly treat, you must take your baby to the Infants' Hospital up at Hampstead, where it will obtain far superior treatment to anything we can advise"? It would be interesting to know your opinion of the article. I enclose my card, and remain,

Yours faithfully,

(ANOTHER) M.D.

March the 18*th*, 1905.

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Original Articles.

NEVER FORGET TO MAKE A RECTAL EXAMINATION IN A CHILD: THE PRACTICAL ASPECTS OF BIMANUAL EXAMINATIONS IN PELVIC AND ABDOMINAL AFFECTIONS OF CHILDHOOD.*

By George Carpenter.

The subject which I have selected for my address this evening, viz. "Bimanual Examinations in Abdominal and Pelvic Affections of Childhood," is of considerable practical importance to the clinician, and is well worthy of your close attention.

For some years I have studied this method, and from time to time I have made communications to medical literature on this subject, the first being to 'Pediatrics' in June, 1896.

To commence, I will draw your attention to the way in which such an examination should be conducted. The administration of an anæsthetic is advisable, though not absolutely necessary, in order that the exploration may be undertaken under the most advantageous circumstances. The investigation is made with the child in the dorsal position, its thighs are flexed on its abdomen, the well-lubricated right index finger of the examiner is passed into the bowel, and his left hand rests on the relaxed abdominal parietes. The whole of the right side of the pelvis and the corresponding part of the lower half of the abdominal cavity can be explored with the right finger, and the left side of the pelvis and abdomen with the left index finger, the examiner crossing over to the left side of the patient for this purpose. Or the right index finger can be kept in the rectum, the child being turned on to its abdomen to complete the examination. There are certain advantages attached to this latter method, because gravity comes to our assistance and brings within reach what otherwise might be tucked away, and it saves a change of hands; but it does not facilitate the combined use of both hands.

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* An address delivered before the Wimbledon and District Medical Society Friday, March the 10th, 1905.

Before the examination is made the bowel must be cleared, and the bladder emptied. The latter is so loosely attached that it readily rises in the abdominal cavity when filled, a feature observed until near puberty.

When passing the index finger into the rectum, which, like the sacrum, is almost straight, the first obstruction met with is the cord-like sickle-shaped edge of the falciform ligament. On escaping this obstacle the finger is free in the pelvis, and meets with no further resistance to its passage.

The falciform ligament is a most important guide for the pelvic viscera. It forms a sickle-shaped arch round the rectum; it is attached in front in the female to the lower part of the cervix and behind to the sacrum.

In a female child between 2 and 3 years of age the uterus, which lies in the upper part of the pelvis, is about an inch long and half an inch broad at the fundus, and it is almost wholly made up of cervix. It can be readily grasped between the examining fingers, or rolled between the index finger and the symphysis. The organ is freely movable (*vide* Fig. 1).

The Fallopian tubes, the fimbriated extremities of which reach to the sides of the pelvis, will be found some little distance in front of the edge of the falciform ligament and at a higher level. Roughly estimating their diameter for clinical purposes, they are when near the uterus about equal in size to the vas deferens, at corresponding ages, and in length they vary from one to three inches according to age. Each tube pursues an arc-like course, with the convexity pointing forwards.

The ovaries, which are situated at a lower plane than the Fallopian tubes, and behind them and near their fimbriated extremities, will be readily located, when the Fallopian tubes and uterus have been identified. They vary in size from the infantile ovary, which is about five sixteenths of an inch long, and a quarter of an inch broad, to organs measuring one and a half inches by half an inch, a size found in those approaching puberty. Intermediate sizes are found according to age, but ovaries show some variation in bulk in children of corresponding ages. The organs are for the most part elongated and oval in shape, but some are more or less round, and as in the testicle so in the ovary, one organ is not infrequently decidedly larger than its fellow. At birth the ovaries have descended as far as the brim of the true pelvis, but in children a few weeks old they are to be found close to the external iliac arteries at the sides of the pelvis.

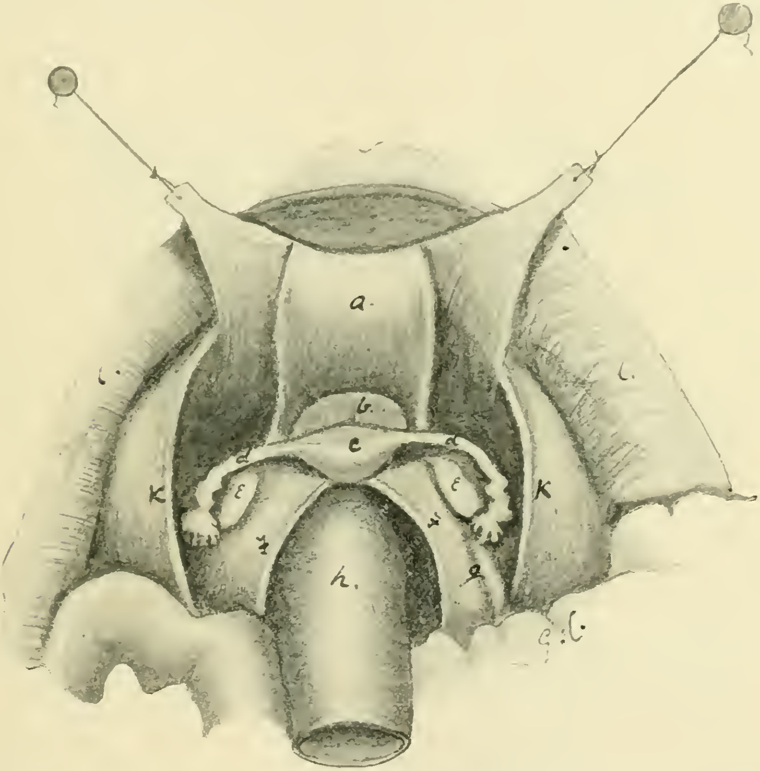

Fig. 1.—Pelvic contents of a female child between 2 and 3 years of age. The bladder has been partially raised out of the pelvis. *a*, bladder; *b*, vagina; *c*, uterus; *d*, Fallopian tubes; *e*, ovaries; *f*, falciform ligament; *g*, ureter; *h*, rectum; *k*, brim of pelvis; *l*, reflected abdominal wall.

By an examination such as I have indicated, the whole of the pelvis and its contents can be readily explored, and abnormalities which occasion ill health and which would otherwise escape detection will be discovered with certainty.

I will illustrate my contention by the recital of a few practical examples which have come under my observation within the past few years.

My first case is that of a little girl, who had suffered from constipation for a considerable period, which had been unrelieved by the various drugs at our disposal in such cases—and their number is legion, as you know. A rectal examination was made, and as a result a myeloid sarcoma was discovered to be growing from the anterior surface of the sacrum.

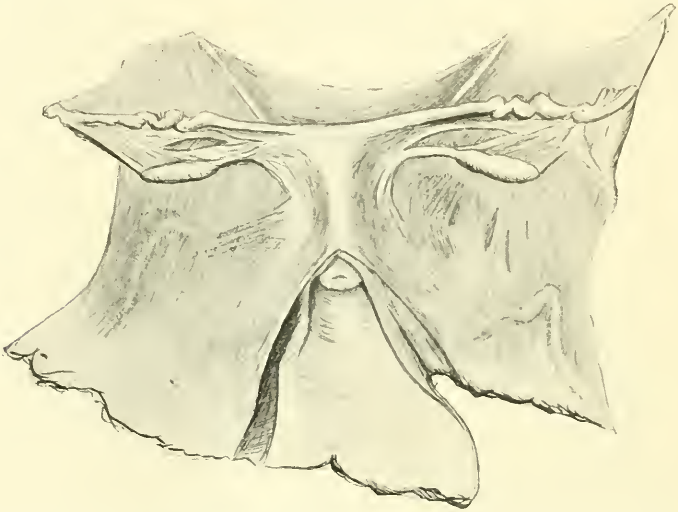

Fig. 2.—Internal genitalia of a female child between 2 and 3 years old, seen from behind, showing the uterus, Fallopian tubes and ovaries. The vagina has been slit up and displays the os uteri, and above this is the attachment of the falciform ligament, which falls to right and left of the cut vagina. The ureters are dimly outlined on either side of the falciform ligament.

The next is that of a syphilitic infant, aged 22 months, who was free from vulvitis.* It had Parrot's nodes, the free edge of the spleen extended four fingers' breadth in front of the costal margin, and the liver three fingers' breadth below the costal margin in the nipple line. In the right inguinal region there was a tumour the size of a French walnut; this did not feel fixed on palpation. On making a bimanual examination the uterus was found to be normal. Anchored to its upper part by a short cord-like attachment was the tumour, and on the posterior surface of this tumour was a convoluted tube. The tumour was freely movable and could be carried over to the mid-line of the body, though not beyond it. Fluctuation could be obtained. The ovary on the opposite side was normal, but on the affected side it could not be found. Fig. 3 is a drawing of my conception of the condition, as gathered by this examination. I now pass round a drawing which was made of the tumour after its successful removal. It shows a small ovarian cyst with a thickened Fallopian tube attached—the fimbriated extremity of the tube is well represented. A bristle has been passed along the tube, a length of

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* Article "Tuberculous Peritonitis," by George Carpenter, M.D., vol. iii, p. 90, 'Reports of the Society for the Study of Disease in Children.'

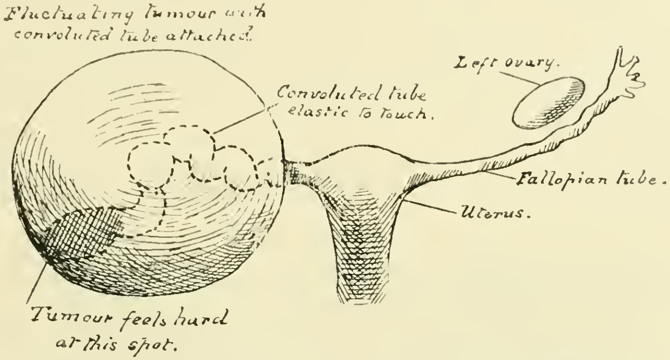
Fluctuating tumour with convoluted tube attached.
Convoluted tube elastic to touch.
Left ovary.
Fallopian tube.
Uterus.
Tumour feels hard at this spot.

FIG. 3.—Condition of the internal female genitalia in a child 22 months old, as determined by a rectal and bimanual examination.

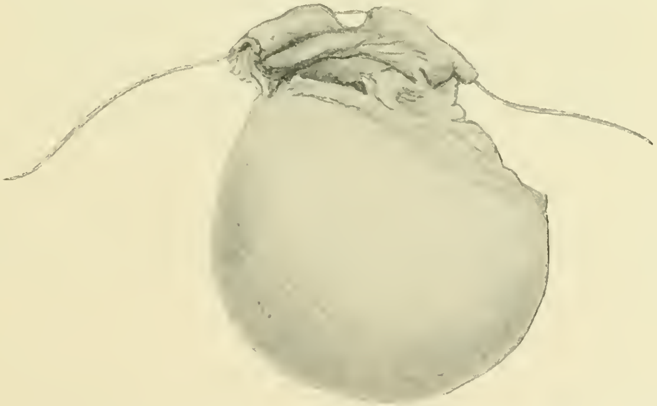

FIG. 4.—Drawing of the ovarian tumour and dilated Fallopian tube from a child 22 months old, as it appeared after removal.

which has been cut out. I think you will admit that my clinical conception of it is not far removed from the actuality.

My next example of pelvic disease in the child is that of a small girl aged 3½ years who had suffered from a vaginal discharge of six weeks' duration, which was found to be gonorrhœal.* A bimanual examination of the pelvis was made. On the right side there was an irregularly shaped elastic tumour attached to the uterus at its upper part and from which it could not be differentiated. It presented a central depression, and measured, at a guess, 1½ inches or more in length and three quarters of an inch across. When rolled between the fingers of the two hands there seemed to be an ill-defined cord upon it at one part. On the left side the Fallopian tube apparently ended in a fusiform swelling, which was attached to the side of the pelvis, and which was about an inch long and a quarter of an inch broad. This was probably the enlarged fimbriated extremity of the Fallopian tube. Lying below this were two rounded bodies, somewhat movable, one of them being about the size of a small pea, the other half that in diameter. The uterus

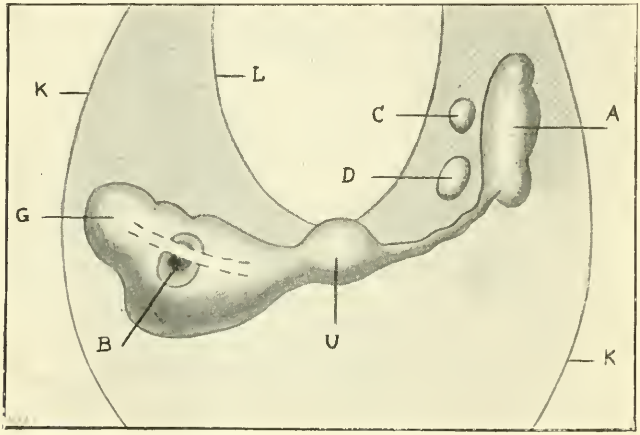

Fig. 5.—Gonorrhœal inflammation of the uterine appendages in a girl of 3½ years. Condition of the pelvic genitalia as determined by a bimanual rectal examination on November the 3rd. A, Fusiform swelling in which the Fallopian tube terminated, and behind it two rounded bodies (D and C). B, central depression; G, irregularly shaped elastic tumour, with an ill-defined cord upon it, shown by the broken line; K, pelvic brim; L, falciform ligament; U, uterus.

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* "Gonorrhœal Inflammation of the Uterine Appendages in a Girl of 3½ years detected by Bimanual Examination; Spontaneous Recovery," by George Carpenter, M.D., vol. iv, pp. 200–4, 'Reports of the Society for the Study of Disease in Children.'

felt natural, except where it was attached to the tumour on the right side. All the parts had a woolly and indistinct feel, which was thought possibly to be owing to associated pelvic peritonitis. A month later the left ovary and Fallopian tube were found to be of natural size. The right Fallopian tube was decidedly enlarged, and associated with it was a very elastic tumour half an inch or more in diameter (Fig. 6). The uterus felt normal and all parts were freely movable. There was still a purulent discharge from the vagina. A month later considerable improvement had taken place on the right side. The Fallopian tube was but slightly larger than natural, and the part in association with it already described, and which may have been the ovary, was also much smaller but still too large for a healthy ovary. The vaginal discharge was as bad as ever. Leonard Bidwell has recently reported in the 'British Journal of Children's Diseases' (October, 1904) a case of gonorrhœal salpingitis in a child aged 6. Salpingectomy was performed, but the vaginal discharge persisted and was not cured until the uterus was curetted.

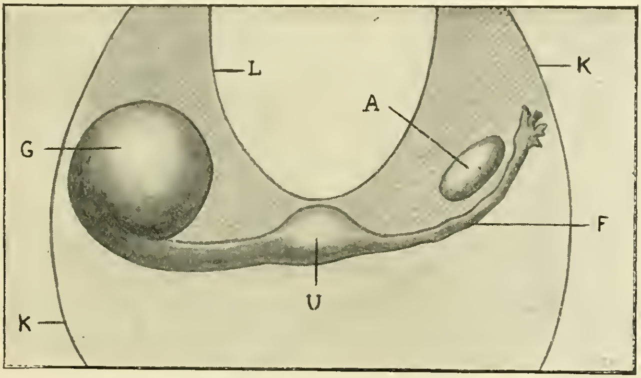

Fig. 6.—Condition of the pelvic genitalia as determined by a bimanual rectal examination on December the 1st. A, Left ovary; F, Fallopian tube, both of natural size; G, elastic tumour on the right side associated with an enlarged Fallopian tube; K, pelvic brim; L, falciform ligament; U, uterus.

There are now a number of cases of localised gonorrhœal peritonitis in little girls on record, but the cases are incomplete, I think, by reason of the absence of a bimanual examination. I am of opinion that all children suffering from a vaginal discharge should be examined *per rectum* as a matter of routine, and if that discharge be gonococcal there should be no hesitation in making such an examination. Marx, in the 'Gazette de Gynecologie,' of November the 15th, 1895, called attention to the fact that salpingo-oophoritis sometimes complicates vulvo-vaginitis in infants, with symptoms similar to those found in the adult. He supported this statement by referring to the post-mortem examination of fifteen children who had symptoms of this complication, and in five of them the Fallopian tubes contained pus and their uterine attachments were sealed. He thinks that these infantile inflammations are apt to commence afresh at puberty, and often are the real cause of pelvic inflammations of newly-wedded women, hitherto frequently credited to the husband. Of tuberculous disease of the Fallopian tubes I have encountered several examples in practice. All of the cases, however, were in association with tuberculous peritonitis, or attended by tuberculous lesions elsewhere, usually by general tuberculosis. I have no example of primary disease of these structures, but I do not doubt but that primary tuberculosis occurs occasionally. Should it be my fortune to meet with such a case I should not hesitate to recommend removal of the diseased adnexa. Sometimes an ovary is involved, or the uterus, or both of them. The disease to clinical observation is often one-sided, but in the pathological specimens that have come under my notice both tubes have been attacked.

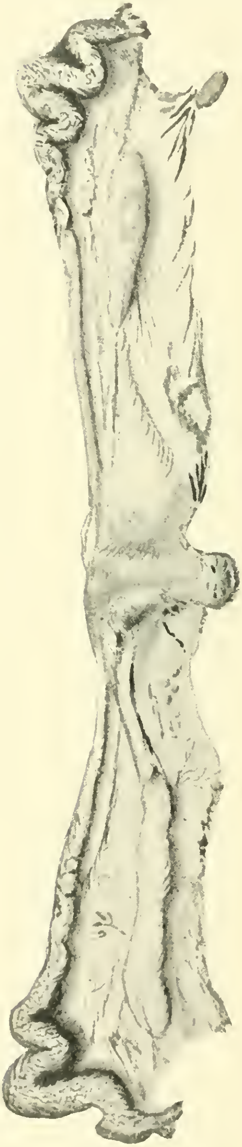

Fig. 7.

Fig. 7 is a drawing of enlarged caseating Fallopian tubes removed post mortem from a girl aged 9 years, which had become invaded at their fimbriated extremities by extension of a tuberculous peritonitis.

Fig. 8 is a sketch of a specimen which was removed from a child aged 21 months. It was found in the post-mortem room. The tubes were filled with pus, the left being in communication with an abscess cavity holding one drachm. The child died of general tuberculosis.

Fig. 9 is a sketch of a condition I discovered in a girl aged 6 years. There was a tuberculous lump occupying the right inguinal, lumbar, hypogastric, and umbilical regions, together with a typical omental thickening. The uterus was normal (Fig. 10). Passing from it to the right was a curly tube the size of the little finger, which could be hooked down, when an oval lump was felt which was undoubtedly an enlarged ovary. The left Fallopian tube was not so enlarged, and it did not curl ; its corresponding ovary was not enlarged.*

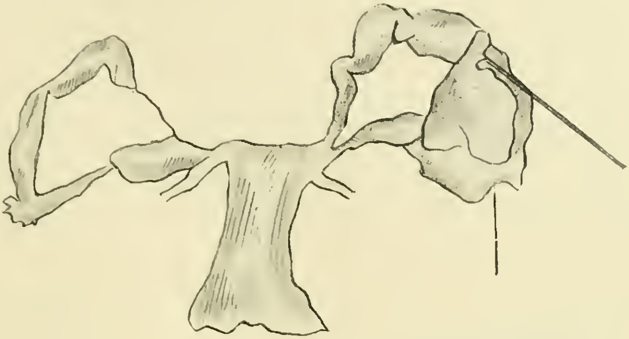

FIG. 8.

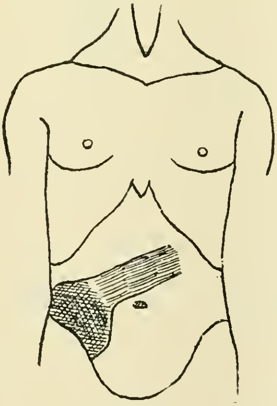

FIG. 9.

Displacements of the ovaries and tubes into the inguinal and crural openings sometimes occur. I have been able to detect by bimanual examination a hernia of the right tube and ovary in the inguinal canal of an infant. That such a condition can be discovered by bimanual examination is of considerable practical importance. The youngest ovariotomy on record was made in a child aged 3 months. A swelling in the inguinal region suddenly occurred and, when various measures had been adopted for its relief, without success, it was operated upon. The contents of the sac were found to be the ovary and the Fallopian tube.

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* "Tuberculous Disease of the Female Genitalia," article "Tuberculous Peritonitis," by George Carpenter, M.D., vol. iv, pp. 79-83, 'Reports of the Society for the Study of Disease in Children."

Moreover, there are a number of cases of ovarian disease in children on record. The majority of the cases were ovarian dermoids, or dermoids of the broad ligament. A few were cystic, similar to the condition found in adults. Carcinoma, carcino-sarcoma, and sarcoma of the uterus are not unknown, and sarcomatous vaginal polypi with implication of the surrounding structures with sarcomatous growths are occasionally observed.

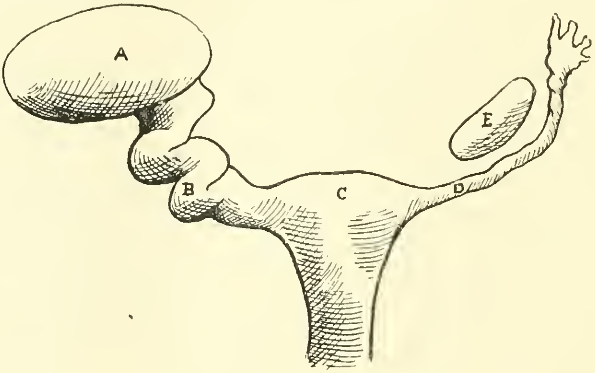

Fig. 10.

Another condition which is occasionally discovered by a rectal examination is tuberculosis of the seminal vesicles, in association with tuberculous peritonitis; it may occur alone, the prostate may be involved, or both of these structures may be attacked, and the testicle may or may not escape.

Passing for the moment to the region of the umbilicus—a small boy aged 3 years was brought to hospital for a purulent discharge from the navel. A mass of glands the size of a tangerine orange could be felt in the abdominal cavity. A probe directed into the umbilical fistula passed a short distance into a sinus and stuck there. There appeared to be no connection between the fistula and the enlarged mesenteric glands. *Per rectum* a nodule the size of a pea was found in the situation of the prostate, and on either side of it the seminal vesicle was slightly enlarged. It was then found to be possible to pass the probe from the umbilicus to the prostate *viâ* the urachus, along which the abscess had tracked. The pelvic contents were otherwise normal, and there was no evidence of tuberculous peritonitis.

On the value of this method of examination in the detection of calculi and foreign bodies in the bladder and other vesicle disorders I will not detain you—investigation by rectal touch has been recognised as valuable in these complaints for a long time.

Transferring the attention from the pelvis to the abdominal cavity, I would impress upon you the importance of making a bimanual examination as a matter of routine in all obscure cases of disease in children. In infants and young children the pelvis and the abdomen are small, and it is possible in them to investigate the whole of the lower part of the abdominal cavity and to feel well into the flanks.

When a child is suffering from diarrhœa and tenesmus a rectal examination should at once be made. Such symptoms are not infrequently due to rectal polypi.

Dysentery, or ileo-colitis, is associated with screaming, vomiting, and the passage of blood and mucus by the bowel, symptoms which are identical with those of intussusception. In intussusception there is usually an elongated abdominal tumour to be felt, but the ileo-cœcal invagination may be short and not readily detected by palpation. The advancing portion of an intussusception feels much like the pregnant os uteri, and the forefinger can be swept round but not passed beyond the nipple-like projection, whereas in ileo-colitis the mucous membrane is felt to be thickened only, there is no projecting mass with a central dimple, and the passage of the forefinger is not prevented.

Chronic intussusception is of occasional though infrequent occurrence. It is apt to be confounded with tuberculous disease of the omentum, which forms a sausage-like tumour passing transversely across the abdomen above the level of the umbilicus, and to which it bears a strong clinical resemblance. Formed fæces are apt to be found with this condition; symptoms of obstruction may be absent; peristaltic contractions in the tumour may not be felt; and blood-stained mucus or blood in quantity may not appear. If in such a case the child be sufficiently small, or the intussusception be sufficiently low down to admit of a satisfactory digital examination the diagnosis would be assured. Otherwise it would be necessary to rely upon contractions in the tumour, and the presence of blood in the stools.

The fact that the iliac fossæ are well within reach of the forefinger makes bimanual examinations of immense service in the detection of appendicitis. That which by abdominal palpation appears to be only deep-seated tenderness in the right iliac region is readily recognised as a local tumour by bimanual examination. In appendicitis pain is *constant*, not paroxysmal, and there is deep-seated local tenderness, but not infrequently abdominal pain appears to be *generalised* rather than local, and the abdominal parietes are resistant, and it is not until a bimanual examination is made that the nature of the illness is recognised

In impacted fæces in the cæcum pain is not constant, and there is no deep-seated tenderness; the symptoms are otherwise the same. In all cases of illness of an obscure nature a routine bimanual examination may clear up the diagnosis. Thus a boy aged 7 years, who had been ill with an indefinite febrile complaint apparently due to poisoning by sewer-air, improved under treatment, and at the end of nine weeks was on the point of being sent to a convalescent home, when his temperature suddenly ran up to 104° F., remained high, and was of an intermittent and remittent type. He began to lose ground once more, became drowsy, and his cheeks were flushed. There was no suspicion of tubercle, there were no physical signs, and with the exception of a trifling amount of blurring of the optic papillæ on their temporal sides nothing could be found by routine methods of examination. A rectal examination was made, and an abscess was found at the back of the rectum, between it and the sacrum, which yielded an ounce of foul-smelling pus. Finally, after some months of illness, in which pus tracked in various directions through the abdominal parietes, he eventually made a satisfactory recovery, and is now a strong and healthy adolescent.

Passing now to the important subject of tuberculous peritonitis, structural alterations in the tissues, such as the agglutination of intestinal coils by tuberculous deposits, localised collections of serous or purulent fluid, which are apt to be hidden by gas-distended bowel, and tuberculous glands cannot escape detection, however difficult to appreciate through the abdominal wall, if this method of physical examination be employed.

But tuberculous peritonitis is not invariably represented by well-defined lumps in the abdomen, and such cases are apt to be confounded with those suffering from chronic gastro-intestinal catarrh, to which they bear a strong resemblance, and *vice-versâ*. You must have frequently encountered such cases, usually rickety children, with their enlarged abdomens, wind-distended intestines, unhealthy motions, colicky pains and febrile disturbances, which have proved a source of anxiety to you, and doubtless many such have been suspected of being tuberculous. Such cases are common enough in hospital practice and are brought by their mothers for advice, because they are supposed to have "consumptive bowels." It is in such difficult cases as these that you will learn to appreciate my method of physical examination. If on bimanual examination there be an excess of tissue between the examining fingers, over that which can be accounted for by the abdominal parietes, there need be no hesitation in deciding in favour of tuberculous peritonitis. With simple distension of the bowels the fingers appear to be separated by the abdominal walls alone. Of course by bimanual examination it is not possible to distinguish between tuberculous peritonitis and those rare cases of abdominal sarcoma, and rarer still of carcinoma, which simulate the simpler disorder (*vide* Fig. 11). But it is possible sometimes to negative a diagnosis of tuberculous peritonitis by means of this method, and to correctly interpret the physical

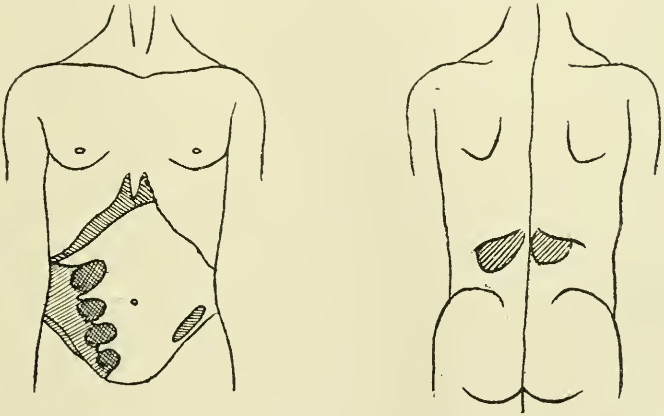

FIG. 11.—From a girl, aged 3½ years, who had ailed for three months and been ill with a swollen abdomen for three weeks. Large blue veins coursed over the abdominal parietes. The abdomen was flaccid. Lumpishness was detected chiefly on the right side, and here there was a mass which was rounded and nodular. In the right nipple line some little distance below the costal margin was a rounded mass. These tumours were united by ill-defined lumpishness. In the left iliac region there was an ovarian tumour the size of a walnut. Half an inch below the twelfth rib on either side was a smooth rounded mass considered to be the kidney. The feet and legs were œdematous. Microscopical examination proved the tumours to be small round-celled sarcomata. The kidneys were infiltrated uniformly. The left ovary was replaced by new growth, and a new growth, the size of a broad bean, was found in the right ventricular wall of the heart. The tumour in the right iliac region arose from the right iliac fossa. The lower mass involved the cæcum, and it formed a distinct tumour there, and at the same time spread into the adjoining mesentery. A thick deposit passed towards the rectum. The upper swelling was a round well-defined growth of the size of a small orange, situated in the mesentery adjoining the intestinal growth.

signs, which are apt to be misconstrued on abdominal palpation alone. Thus a child, aged 2 years, suffering from whooping-cough and broncho-pneumonia was found to have a lump in his abdomen. On this finding a positive diagnosis of tuberculous peritonitis was made. But a bimanual examination yielded additional information which was quite opposed to the original view. An amended diagnosis of horse-shoe kidney was made, but it was not favourably received. However, the child, unfortunately, succumbed to the lung trouble and the correctness of my notes was verified at the post-mortem examination. A horse-shoe kidney was found—the only instance, I believe, of a correct diagnosis of this condition being made during life.

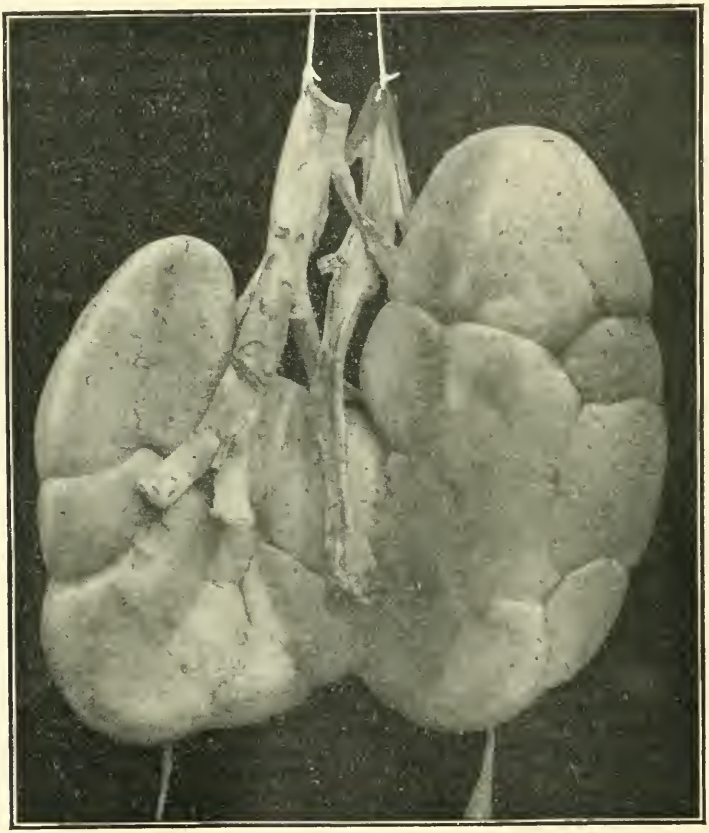

Fig. 12.—Horse-shoe kidney—front view.

Figs. 12 and 13 are photographs of the kidney.

In the diagnosis of difficult abdominal cases other examples which would be likely to occasion errors will doubtless occur to you.

In this communication I have but lightly touched upon a variety of interesting abdominal and pelvic conditions, and my remarks must be looked upon as suggestive rather than as exhaustive of a subject which has great possibilities before it.

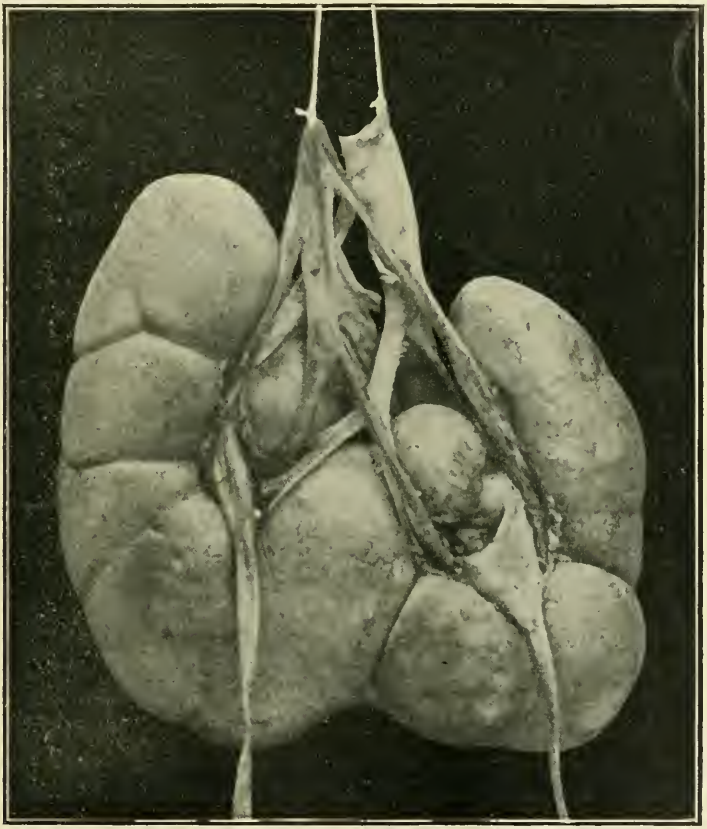

FIG. 13.—Horse-shoe kidney—back view.

If I have succeeded in bringing before you something new in methods of diagnosis, I hope I shall enrol fresh clinical observers who will add their share to our knowledge of pelvic diseases in the young.

STILL'S TYPE OF CHRONIC JOINT DISEASE IN CHILDREN AND THE SO-CALLED "TUBERCULOUS RHEUMATISM."

By F. Parkes Weber, M.D., F.R.C.P.
Physician to the German Hospital, London.

In November, 1896, Dr. G. F. Still read a paper at the Royal Medical and Chirurgical Society on a "Form of Chronic Joint Disease in Children,"* previously confounded with rheumatoid arthritis, but to be distinguished by the accompanying enlargement of the spleen and lymphatic glands,† which is generally of moderate degree. The articular affection is multiple and symmetrical without tendency to suppuration and without fibrillation of cartilage and osteophytic changes, but with capsular thickening and a good deal of swelling, probably due to effusion around, rather than into, the joints. The hands, feet, knees and cervical spine are, I think, most generally affected.

It is probable that Dr. Still took rather too gloomy a view of the prognosis, having at that time studied chiefly the graver cases, and that many relatively less severe cases of this symptom-complex occur, especially in somewhat older and less rachitic and cachectic children, in which `great improvement, or ultimately even cure, results. The following cases will, I believe, serve to support this opinion. In the first one very great improvement took place, and in the second one the affection appears to be relatively mild and quite stationary.

The first patient is a boy, Arthur S—, now aged 7¾ years, in whom the disease seems to have commenced acutely in the latter part of 1900. I showed him at the Medical Society of London in April, 1902, and again in March, 1903, to point out the improvement which had taken place. From November to December, 1900, the boy suffered from an illness said to have been articular rheumatism. Before this he had apparently been healthy. Cervical rigidity was noted about Christmas, 1900, and at one time gave rise to a suspicion of spinal caries. The swelling of the hands was observed shortly before May the 1st, 1901, when he was admitted under my care at the German Hospital. The articular affection of the feet was little marked on admission, but became a decided feature of the case by the end of August, 1901. Under treatment by rest, aspirin, iodide of iron, arsenic, malt, etc., the condition, in regard to swelling and tenderness of joints and general appearance, fluctuated considerably, but the wasting of the muscles of the limbs at first progressed. Occasionally there was moderate fever, and about the beginning of November, 1901, there was an attack of endocarditis, and the heart began to show signs of mitral valve disease, which have persisted since that time. In January, 1902, Dr. F. J. Poynton and Dr. A. Paine, at my request, kindly attempted to obtain microbic cultivations from the swollen joints, but the attempt failed, the exudation

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* 'Med.-Chir. Trans.,' vol. lxxx, p. 47. See also Dr. Still's account of rheumatoid arthritis in children in Allbutt's 'System of Medicine,' 1897, vol. iii, p. 102.

† It is doubtful whether obvious enlargement of both spleen and lymphatic glands together should be considered as an essential diagnostic feature of this clinical group. Several years ago I observed a rheumatoid condition in the fingers and knees of a mentally deficient girl, aged 16 years, with moderate enlargement of the spleen, but, I believe, without any enlargement of lymphatic glands. The arthritic affection was quite chronic in her case, and probably a variety of Still's type occurring in an older patient.

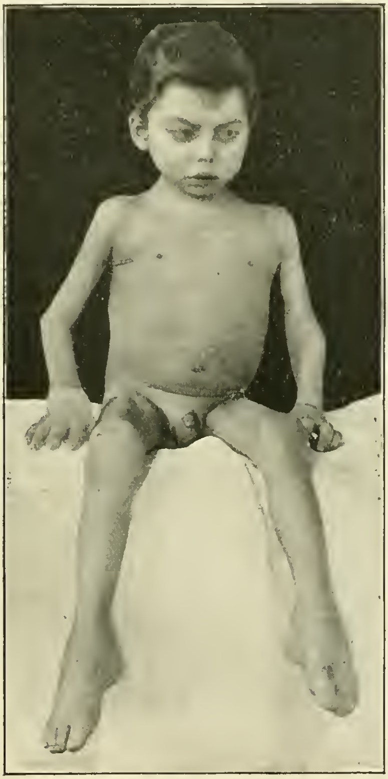

FIG. 1.—From a photograph, February, 1902.

apparently being gelatinous and into the periarticular tissues rather than into the synovial cavity of the joint itself. Röntgen ray photographs showed no change in the bones at the articulations. In January, 1902, the blood-count gave 4,600,000 red cells and 31,000 white cells to the cubic millimetre of blood. In February, 1902, the temperature began to remain below 100° F.; the child had a good appetite, put on flesh, and seemed happy and free from pain and tenderness in the joints.

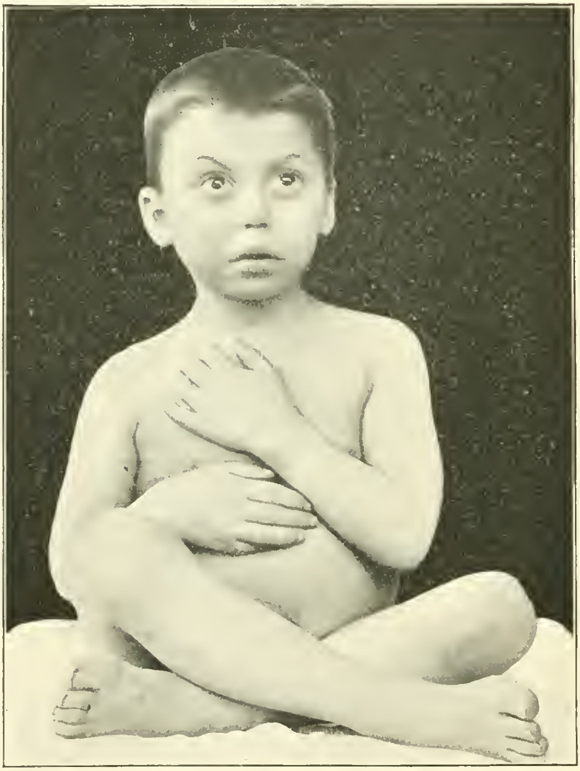

Fig. 2.—From a photograph, March, 1903.

In April, 1902, the condition was as follows. There was some apparent enlargement of the knee and elbow-joints, but the most marked change was the symmetrical swelling about the articulations of the hands and feet. In the feet it was most marked over the metatarsus, in the hands over the proximal ends of the metacarpal bones and over the finger-joints. There was considerable stiffness in the cervical spinal column, and this led to the boy's showing unusually much of the white of his eyes whenever he looked at an object above him, the rotation of his eyeballs being extreme to make up for the stiffness in his neck. The heart was enlarged. The apex-beat was in the fifth space, one inch outside the nipple line, and the first sound at the apex was replaced by a musical murmur. The spleen extended below the ribs, and the lymphatic glands in the neck, axillæ and groins were enlarged, but not greatly so. They were freely movable and separate from each other. It is noteworthy that the liver, as well as the spleen, was considerably enlarged, the edge being felt 1½ inches below the costal margin. The urine showed nothing abnormal.

From that time to March, 1903, the boy was kept under continuous observation. In May, 1902, there was a slight attack of (catarrhal ?) jaundice, and occasionally in May, June, July, and August the temperature was slightly raised. In September, 1902, the general condition and the articular affection were improved, but there were crackling and signs of effusion in both knee-joints. There was no fever from the middle of August to the middle of December; the child continued to improve, and when examined in December neither the liver nor the spleen were felt. Unfortunately the boy then got enteric fever, and from December the 16th, 1902, to January the 18th, 1903, there was more or less pyrexia, and later on, again, between January the 30th and February the 19th, there were occasional elevations of temperature to about 100° F. During the attack of enteric fever the boy became emaciated, and his spleen was considerably swollen; but afterwards he put on flesh and gained rapidly in health and strength, and was free from fever. In March, 1903, he appeared happy and lively. His joints were almost normal, with the exception of crackling in the knees and slight spindle-shaped enlargements about the finger-joints. He could move his head freely, and the rigidity of the upper spinal column, which had been such a marked feature of the case a year previously, had practically disappeared. The spleen was slightly enlarged, but the lymphatic glands could not be felt, except the inguinal ones, which even in healthy persons are sometimes found slightly enlarged. The heart was still somewhat enlarged (apex beat in fifth space, ¾ inch outside nipple line), and a very soft apical systolic murmur could still be detected. The urine showed nothing abnormal, and the blood (hæmoglobin 90 per cent. of the normal) contained only 14,000 white cells in the cubic millimeter instead of the 31,000 found in January, 1902. The boy had been taking cod-liver oil and malt and a little Easton's syrup, and had been given a tepid bath in the mornings with a cool douche over the back.

He left the hospital in March, 1903, but in December was again admitted with occasional fever, swelling of the knees and some increase in the cervical stiffness. Nothing abnormal was found in the lungs. The heart was still somewhat enlarged, and the apical systolic murmur was still present. In February, 1903, he again improved, but still in May, 1904, when he left the hospital he weighed no more than he did in March, 1903. The following note describes the condition when I last saw the boy on December the 22nd, 1904: He looks well and goes to school. There is scarcely any stiffness in the vertebral column, and movements in his limbs are quite good. There is still puffiness over the back of the proximal part of each metacarpus and some thickening of the fingers; also some thickening over the back of both feet, and some swelling of both knee-joints. Apparently no pain anywhere. The spleen can just be felt on inspiration. The axillary glands on both sides are slightly enlarged. The cardiac apex-beat is half an inch outside the nipple line, and there is a slight systolic apical murmur.

The second case is that of a girl, Rachel M—, aged 12½ years, whom I showed at the Society for the Study of Disease in Children on February the 17th, 1905. Her mother is living and healthy; her father died of consumption. The articular trouble commenced during the winter 1902-3, in the left foot apparently. Soon afterwards the right foot was affected, and there was pain or stiffness in other joints. The hands were involved a few weeks later. The spinal column seems to have entirely escaped. In May, 1904, when I first saw her, there was chronic swelling about both wrists, with limitation of movement. No signs of cardiac or pulmonary disease were discovered. The edge of the spleen could be distinctly felt during inspiration below the costal margin, and there was slight enlargement of the lymphatic glands in both axillæ. The urine showed nothing abnormal. Fever was absent, and the child's general condition appeared fairly good. In December the condition was much the same. The axillary and inguinal glands, but not the cervical, were moderately enlarged. So also were the tonsils. The splenic dulness was increased, and the edge could be felt at the costal margin with inspiration. The liver was probably of normal dimensions. Koch's old tuberculin, when the dose injected was five milligrammes, gave a definitely positive general reaction, the temperature rising to 101° F. after the injection. It must be noted, however, that the general reaction appeared not to be accompanied by any local reaction in the joints. At present (February, 1905), there is much limitation of movement in both wrists, the right one being the more swollen of the two. The general condition is fairly good. She is shortly going to a sea-side sanatorium or convalescent home.

Owing to the occurrence of endocarditis in my first case, and the knowledge that pericarditis had been found in other cases, I was inclined to think that the whole symptom-complex in this clinical group of cases might be rheumatic, and I hear that Dr. Poynton has likewise observed a case in which typical valvular disease of the heart developed. Possibly the primary cause of the joint condition may vary in different cases, but, at any rate, I regard the hypothesis that in at least some of the cases it is ætiologically connected with tuberculosis as of extreme importance. A multiple symmetrical affection like this is not likely to be due to the local presence of tubercle bacilli in the affected joints, and the joints in these cases do not much resemble ordinary tuberculous joints. It is quite possible, however, that some cases are of the nature of what has been termed "tuberculous rheumatism," that is to say, a symmetrical articular affection set up in specially constituted individuals by toxins from tuberculosis in other parts of the body, the joints, one may suppose, being picked out in these cases on the *locus minoris resistentiæ* principle. In my second case, owing to the positive reaction to tuberculin, there can really be no doubt that in some part of the body there is a not altogether obsolete tuberculosis, and the "tuberculous rheumatism" theory explains why after the tuberculin injection no local reaction was noticed in the joints. Edsall [*] gives the case of a boy, aged 13 years, with Still's type of chronic arthritis, who reacted positively each time that the tuberculin test was tried; in this boy, it may be noted, joint pains accompanied the reaction. G. Mouriquand,[†] in his paper on "Tuberculous Rheumatism" in children,[‡] quotes Poncet's view that tuberculosis, like many other infective diseases, may produce a condition resembling rheumatism.[§] In a case of Johanessen, likewise quoted by Mouriquand, the patient, a girl, suffered from a rheumatism-like affection in both feet at the age of four years. Later on the elbows and knees, and afterwards the hands and other joints were involved, and finally pulmonary tuberculosis appeared and led to death from hæmoptysis.

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[*] 'Arch. Pediatr.,' March, 1904, p. 175. Dr. Ravenel demonstrated the presence of non-virulent bacilli, resembling tubercle bacilli, in the lymphatic glands of Edsall's case.

[†] 'Gazette des Hôpitaux,' Paris, January the 21st, 1904, p. 69: abstract in 'Medical Review,' London, March, 1904, p. 154.

[‡] On "Tuberculous Rheumatism," see also Mohr, 'Berliner Klinik,' November, 1904; and Barbier, 'Société Médicale des Hôpitaux,' April the 3rd, 1903.

[§] See A. Poncet, "Rhumatisme tuberculeux ou pseudo-rhumatisme d'origine bacillaire," 'Gazette des Hôpitaux,' July 25th, 1901, p. 817.

I regret that I have not employed the tuberculin test in my first case. In my second case it has furnished a most valuable indication for treatment. Pure air and good food, which will best protect the patient from the development of active pulmonary tuberculosis, are agents likely to be also useful for the chronic joint trouble.

A CASE OF EXTREME MICROCEPHALY, WITH APE-LIKE MOVEMENTS.

By A. Ernest Jones, M.D., B.S., M.R.C.P.,

Physician to the Farringdon Dispensary; Clinical Assistant to the Hospital for Sick Children, Great Ormond Street.

The following case is, I think, worthy of record on account of the unusual character of the movements, occurring in a subject of extreme microcephaly. The patient, a girl aged 7 years, had no features of particular interest in her personal or family history. She began to walk when four years of age, and had never talked.

The face was well formed, and not unduly large, as sometimes occurs in these cases. The forehead was very low and narrow, and distinctly retreating. The rest of the skull was well shaped and would have been natural were it not for its small size. Its maximum circumference was thirteen inches, which is about the natural circumference in a new-born infant. There was no loss of power, no anæsthesia, and all the reflexes were natural. There were no fundus changes; the cranial nerves showed no evidence of affection. The patient's health was good, and she presented no luetic stigmata. The general development was fairly good, and would perhaps be adjudged as being that of a child aged 6 years.

Mentally, the development was better than might have been anticipated. She evinced a considerable degree of affection for her favourite nurse, and had no difficulty in recognising other children or her different toys. She obeyed various simple commands; she did not suffer from fits of temper, nor was she lachrymose. Her habits were cleanly; she slept well, and there was no nocturnal enuresis. She was exceedingly shy with strangers, and, when held, behaved like a frightened bird, struggling and refusing to be pacified until released. With older friends, however, she was quite at home, enjoyed her games, and even assisted in various simple domestic offices. She made no attempt at articulation, and only rarely at phonation.

The remarkable smallness of her head gave her a weird and non-human appearance, and the uncanny impression thus produced on the observer was intensified by the curious character of her movements. These may best be described as being of exceedingly sudden initiation and swift execution, approaching the lightning-like rapidity seen in paramyoclonus multiplex, though they differed completely from those seen in this and other allied conditions by being entirely voluntary and purposive in kind. There were no involuntary movements or tremors, and co-ordination was perfect. All movements carried out were of the lightning-like character just described, there being no variation in the rate of their performance. Still, this character was more strikingly manifest in certain actions than in others, and was particularly evident in a trick the child had of, after a momentary glance at a stranger, swiftly averting the head, and covering the face and closed eyes with her hands. This she would repeat time after time, first peeping round the side of her hands and then rapidly hiding her face under their shelter. Another curious trick she had learnt was to jump into her nurse's arms in the following way: if the nurse, standing a foot or two away, held out her arms in an inviting manner, the child, instead of cuddling to her and asking to be lifted up, made a dart-like spring upwards so as to reach the nurse's neck, to which she then clung tenaciously. This trick, and indeed all the movements, reminded one irresistibly of the habitual movements of the smaller monkeys, such as the bonnet or macaque, hence I have referred to them in my title as "ape-like movements." This simian resemblance was more striking in the movements of the arm, and particularly in those of the head.

The smallest head I know of any reference to is one mentioned in Allbutt's 'System' by Dr. Shuttleworth and Dr. Fletcher Beach; in that instance the head of a girl, aged 12 years, measured twelve inches. Such small measurements as these two cases show are very uncommon; movements such as were observed in the case just described must be far rarer still. I am indebted to Dr. Evans, under whose care the case was, for permission to record it.

A CASE OF DELAYED CHLOROFORM POISONING.*

By C. M. Richardson, M.B., Ch.B.,
House-Surgeon Children's Hospital, Derby.

George S—, aged 2 years and 7 months. Admitted into the Children's Hospital, Derby, March the 28th, 1905, under the care of Dr. Mervyn Wilson.

Family history.—Father, mother, and one other child alive and healthy. No children have died in the family. The mother has had no miscarriages.

Previous history.—The child had always been healthy. There was no history of vomiting, "bilious attacks," etc. He was a quiet boy.

Present illness.—He did not walk till he was two years old, and then developed genu varum. His parents wished his legs to be straightened, and he was therefore admitted into hospital for operation.

Condition on admission.—Patient is a fat, quiet, rachitic child, but otherwise healthy-looking. There is outward curvature of both tibiæ. The heart and lungs are normal. Appetite is poor; bowels regular. The lower border of the liver is at the costal margin, in the mammary line. The abdomen is normal. He has phimosis, but no difficulty in micturition. The urine is normal.

March the 30th.—He was prepared for operation on March the 30th. He had milk at 5 a.m., and vomited this at 5.30 a.m. As his temperature was normal, and nothing abnormal was found on examination, the operation was not postponed. At 9 a.m. he was anæsthetised, A.C.E. mixture being given from a Rendle's mask. Both legs were forcibly straightened, the tibiæ being broken. No skin incision was made. The legs were then put up in good position in plaster. The whole operation lasted 30 minutes. Four drachms of A.C.E. mixture were used, but the child did not inhale all this, as the mask was frequently off the face. He took the anæsthetic well, was not sick, was fretful and restless for a time on coming out of the anæsthetic, but passed a good night.

March the 31st, 7.30 a.m.—The boy suddenly became collapsed, cold, lips blue, respiration rapid. At 8 a.m. he was in a serious condition, with a weak, rapid pulse. Half a drachm of brandy was given, hot-water bottles were applied, the end of the bed was raised, ten minims of ether were administered subcutaneously. 10 a.m.: On examination of the chest, harsh breathing and friction were found at the left base, and the diagnosis of commencing pneumonia in the left lung was made. Liquor strychninæ ♏j, and ether, ♏x, were injected subcutaneously. A saline injection was given *per rectum*, but was not retained. The bowels moved slightly at this time, and he passed urine. Brandy was tried by the mouth, but he vomited it up, with some "coffee-ground" material. Oxygen inhalations were used. 1 p.m.: Slight improvement. Vomited coffee-ground material again. Became weaker in the afternoon. 6 p.m.: Died, thirty-three hours after the operation.

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* "Delayed Chloroform Poisoning," by H. J. Stiles and S. McDonald, 'British Journal of Children's Diseases,' vol. i, pp. 262–267; *Ibidem*, Editorial, pp. 401–409. For full report of paper by Stiles and McDonald, *vide* 'Reports of the Society for the Study of Disease in Children,' vol. iv, pp. 208–271, with coloured plates.

April the 1*st*.—Post-mortem examination. The right auricle was dilated and full of blood, the left ventricle was firmly contracted; otherwise the heart was normal. Lungs: Both bases were congested along the lower border, and slight consolidation was present. Liver: The lower edge corresponded with the costal margin. It was pale, with several scattered yellow patches. One of these patches was sent to the Clinical Research Association for examination; they reported as follows: "This liver shows fatty changes throughout. The degeneration affects the liver-cells, and shows in the sections as spherical spaces. A fresh section stained with osmic acid showed that these spaces contained fat. The change is interesting, as it affects the whole lobule, whereas fatty degeneration, unless very advanced, as a rule affects only the periphery of the lobule." Naked-eye the kidneys and spleen were normal. Nothing else abnormal was found in the abdomen. The head was not examined.

THE RELATION OF TETANY TO GASTRECTASIS.

By James Burnet, M.A., M.B., M.R.C.P.Edin.,

Registrar Royal Hospital for Sick Children; Clinical Medicine Tutor Extra-mural Wards, Royal Infirmary; and Physician to the Marshall Street Dispensary, Edinburgh.

The theories regarding the origin of tetany as it occurs in infancy and childhood are numerous. All of them attribute the condition to some form of irritation of the nervous system. Gowers, in fact, goes so far as to suggest that the lesion is in the anterior horns of the spinal cord. It must be admitted that in early life the nervous system is very unstable, and consequently is very easily upset. At the same time, we cannot overlook the fact that tetany is by no means a common condition, which it would, of course, tend to be were it entirely dependent for its causation on instability of the general nervous mechanism. I think we must go further, and inquire whether or not there is any more definite and specific cause for the manifestations of this condition.

When we come to inquire into the immediate exciting causes of tetany we find that it is commonest in rachitic infants and young children, while apart from this gastro-intestinal disturbances are commonly associated with it. It is frequently met with in connection with certain of the infectious fevers, in the course of pneumonia, while cases are on record in which worms, and even intussusception, seemed to be the exciting cause. For some time past I have been in the habit of carefully investigating cases of tetany with a view to determining the exact cause of its occurrence. During the course of my inquiries I have been struck with the comparative frequency with which I have found gastrectasis present in these cases. That dilatation of the stomach is common enough in fevers, as well as in pneumonia and in rickets, is a matter of common knowledge. The cause of this is no doubt the atony which is produced by the general devitalising process present at the time, and this is aided by the ingestion of fermenting food stuffs and the increase of liquid nourishment administered. In rickets especially dilatation of the stomach is very commonly met with, and is produced mainly by the general muscular atony which is present in this disease. Improper feeding may also have something to do with this rachitic gastrectasis. At any rate, the facts that tetany is usually found in rachitic subjects and that the latter generally present considerable gastric dilatation are, I think, significant, and should not be altogether overlooked.

The following notes of one or two cases are not without interest in this connection.

Case 1.—A. M——, aged 1½ years. Rachitic. Not walking yet. Only two teeth. Fontanelle 1½ inch. Slight craniotabes. No fits. Gets ordinary food, and very little milk. No vomiting or diarrhœa. Tetany well marked. Stomach, outlined by auscultatory percussion, was found to extend for fully an inch and a quarter below the umbilicus. By attention to feeding and the administration of suitable remedies the tetany passed off, and the stomach gradually diminished in size as the child improved.

Case 2.—J. T——, aged 2½ years. Rachitic child, suffering from broncho-pneumonia following on measles. No history of fits, but tetany marked. Considerable vomiting and diarrhœa. Stomach was found in this case to extend midway between the umbilicus and symphysis pubis. The child was being fed on milk and milk puddings, together with beef-tea at intervals. An attempt at lavage increased the severity of the attack, and accordingly further attempts were abandoned. The child was then fed *per rectum*, and given only beef jelly by the mouth. The vomiting then stopped, while the diarrhœa improved for a time. The tetany persisted, however, and the patient gradually sank, eventually dying eight days after he was first seen.

Case 3.—M. R——, aged 2 years. Rachitic patient. Not walking yet. Twelve teeth. Fontanelle still open. Had several fits nine months before. Vomiting and slight diarrhœa. Tetany very well marked, the hands and feet being considerably swollen. Stomach dilated. Treatment was directed to the feeding, which was greatly at fault, and sedatives administered. Within a week the vomiting ceased, and the tetany passed off completely. The stomach, however, still remained dilated, and a month later another attack of tetany developed, which, however, only lasted for a few days. Thereafter the stomach diminished in size, and the child has since been quite free from attacks.

Case 4.—H. M——, aged 5 years. This child was suffering from pneumonia. She had no rachitic history, and had always been fairly healthy until the present attack. The tetany came on, as far as could be ascertained, on the sixth day of the disease. The pneumonia was lobar in type and involved the right middle and lower lobes. The child had been ordered milk, eggs, beef-tea, and brandy. Dyspnœa was extreme, and the stomach extended for nearly two inches below the umbilicus. She had been vomiting everything for the last twelve hours. Mouth feeding was practically stopped, only a little beef jelly being allowed. Small doses of sodium bromide and phenazonum were administered every four hours. The vomiting gradually ceased, and the crisis occurred on the eighth day. The condition of tetany continued, however, for three days longer, during which time the stomach diminished in size. The relief from the tetany practically coincided with the return of the stomach to its normal condition.

The cases quoted are not devoid of significance, for they show that tetany is frequently associated with gastrectasis. Some time ago I recorded a case in which tetany occurred in an adult in connection with gastric carcinoma,* and more recently† I have again referred to the subject, instancing a case of tetany which I once met with during the course of pertussis in a child who had developed broncho-pneumonia and in which the gastrectasis was no doubt due to the very improper feeding which the parents had followed.

It is possible that the presence of fermenting material in the dilated stomach may give rise to toxic substances, while there is no doubt that in many of these cases the food collects in the deep trough which is formed, and remains there until it is vomited, or until perhaps it reaches the intestinal tract, when it produces irritation, and is thus got rid of. In any case this putrid food material generates toxic products, which are bound to affect the body generally, and it may be the nervous system in particular.

Tetany is a somewhat obscure condition, and accordingly I think it advisable that a careful examination of the stomach should be made by auscultatory percussion in every case of tetany presenting itself for treatment. Whether my contention be correct or not, I think much good will be found to result in every case from attention to the state of the gastro-intestinal tract, and by seeing that the stomach is not overfilled with fluid and fermenting foods. Lavage, as a rule, only serves to aggravate the condition, but there is no reason why an attempt should not be made to wash out the stomach in the first instance, as when this can be done great benefit usually results in these cases.

Clinical Memoranda.

INJURY TO THE CORNEA FOLLOWING INSTRUMENTAL DELIVERY.

By Sydney Stephenson.

Paulina H——, aged 12 years, was brought to me at the Evelina Hospital, on November the 1st, 1904, on account of defective sight. R.V. $< \frac{5}{60}$; L.V. $\frac{5}{12}$. Atropine was prescribed, and a week later the girl's eyes were examined. The right cornea was then found to present two faint, grey, curvilinear lines, neither exceeding 0·5 mm. in width, running parallel with one another across the lower half of the cornea. The appearance of these curious marks was so strongly reminiscent of that in the cases described by Drs. Thomson and Buchanan as following instrumental delivery that I questioned the mother with regard to the details of the patient's birth. I then ascertained that the mother—a small woman—was 35 years of age when her first child, the patient Paulina, was born. The labour was a long and difficult one, and was eventually terminated by forceps applied under chloroform by the two medical men in attendance. The baby, when delivered, was "as black as a coal," and was indeed believed at first to be dead. The right eye was noticed to be nearly shut, but the lids slowly assumed a more normal appearance under the influence of a domestic remedy in common use amongst the lower classes in London, namely, a tea-leaf poultice. There have been three living children and two miscarrages since Paulina was born. This history, together with the peculiar lines found on the patient's cornea, left no doubt in my mind that I was dealing with an instance of traumatic keratitis.

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* *Vide* 'The Practitioner,' December, 1903.

† 'Manual of Children's Diseases,' 1905.

To complete the record, it should be added that the vision of the affected eye could be brought to $\frac{5}{12}$ with the following correction: $-1{\cdot}25$ D. sph., with $-1{\cdot}50$ D. cyl. axis 30°. Much irregular astigmatism was present.

A CASE OF GRAVES'S DISEASE IN A BOY TWELVE YEARS OF AGE.*

By Sydney Stephenson.

Two instances of Graves's disease in children have been reported to the Society for the Study of Disease in Children. The first, shown in 1903 by Mr. Arnold Lawson, occurred in a well-nourished girl, aged 12 years, who presented exophthalmos, enlargement of the thyroid—in a word, to quote the author, "the typical characteristics of a patient in an advanced stage of Graves's disease, excepting that she has never lost flesh and shows no trace of anæmia." The second case was shown at the Provincial Meeting at Bristol in 1904† by Dr. E. Cecil Williams. The patient, a girl aged 12 years, was breathless on exertion, there was some exophthalmos, the pulse was 160 to the minute, and slight muscular tremor existed. There was no enlargement of the thyroid, neither was Graefe's sign elicited.

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* 'Reports of the Society for the Study of Disease in Children,' vol. iv, 1904, p. 58.

† *Ibidem*, p. 316.

The case now shown makes, then, the third so far brought under the notice of the Society.

Arthur L——, aged 12 years, fell under my notice on May the 16th, 1904, on account of the condition of his upper eyelids, which were stated to have become swollen about a year before I saw him. The swelling had subsided, but had recurred. There was a history of a former attack of the same nature, affecting both eyes, and lasting one week. A diagnosis of angio-neurotic œdema was made. Four months later, however, the clinical picture had changed. The upper lids were still slightly puffy; but the thyroid was then found to be moderately enlarged; the pulse-rate was 120 to the minute; and there was a slight degree of exophthalmos. The visual field for white was contracted. On the other hand, the findings were negative as regards tremor, sleeplessness, von Graefe's sign, and Moebius's phenomenon.

Does Graves's disease in children present any peculiarities, particularly with regard to prognosis and treatment? The cases I have personally seen in people over 50 years of age have always appeared to me to be of an atypical kind. It is possible that such may be also the case at the other end of the age-scale.

The Society for the Study of Disease in Children.

A meeting of this Society was held on March the 17th, 1905, at 11, Chandos Street, W., Dr. L. G. Guthrie being in the chair.

A Boy with Alopecia Universalis, aged 9 years, was shown by Dr. O. F. F. Grünbaum. The hair of the head came out in patches two years ago, complete baldness resulting in one year. Then the eyebrows and most of the eyelashes seemed to fade away. The nails were normal. No cause was found. Mr. G. Pernet recommended liberal diet, tonics, thyroid extract, and stimulating lotions.

A Case of Late Rickets in a boy, aged 9 years, was shown by Dr. R. Hutchison. For some months the legs had been gradually bending. There was marked epiphyseal enlargement of the lower ends of the radius and the ulna, of the knees and the ankles, with typical rickety curvature of the femora and the tibiæ. The skull, the chest, and the viscera showed no changes. The boy had rickets at the age of three years, and had never completely recovered from it.

A Case of Tuberculosis of the Lacrymal Sac in a boy, aged 9 years, was shown by Mr. Sydney Stephenson. Tubercle bacilli were found in scrapings from the interior of the diseased sac. There was a family history of tuberculosis. The boy had had enlarged cervical glands treated by operation and still presented chronic ulceration of the nasal chambers, probably tuberculous.

A Typical Case of Keratomalacia in a girl, aged 8 months, was also shown by Mr. Stephenson. The condition was one of sloughing of the cornea in a young child suffering from marasmus. It was rare in England. It corresponded with "Hikan," an epidemic disease of Japan, with the ophthalmia Braziliana of South America, and with the destructive keratitis common in Russia during the great Lenten fast. The eyes were kept shut, there was no discharge of muco-pus, and both corneæ were converted into greyish-white sloughs.

A Case of Tremor of the Right Arm in a girl, aged 13 years, was shown by Dr. J. Charlton Briscoe. Very rapid, better felt than seen. It was absent during sleep, was constant while awake, increased after exertion, and diminished after rest. The muscles of the forearm and hand were not involved. No other change in the nervous system was found. The onset was sudden, three months ago, with anorexia and lassitude.

Dr. Guthrie suggested that the condition was due to a mild encephalitis or thrombosis of some of the finer vessels of the cortex on the left side.

Dr. G. A. Sutherland thought the condition "functional," a diagnosis with which Dr. Briscoe agreed.

A Case of Jaundice and very considerable Chronic Enlargement of the Spleen in a child, aged 12 years, was shown by Dr. F. Parkes Weber. The lymph-glands were not enlarged and the blood showed nothing abnormal. The mother had had six stillborn children.

A Case of Osteoma of the Bregmatic Wormian Bone was shown by Mr. J. Howell Evans.

A Case of Tuberculosis Affecting the Lungs, Cervical Glands, and Ears, was shown by Dr. G. S. Hett.

It was discussed by Mr. H. L. Carre-Smith, Dr. Sutherland, Mr. Howell Evans, and others.

Editorial.

THE INFANTS' HEALTH SOCIETY.

We have received a copy of the Report for 1904 of the Infants' Health Society, a Society which has youth on its side, a large number of distinguished names on its Committee, and an Infants' Hospital under its own control. The objects of the Society, as expressed in the Report, are "to spread a knowledge of and to put on an organised basis the best methods of systematically dealing with the chief factors prejudicially affecting the health and life of infants." These objects are admirable in themselves, and we heartily wish the Society success in its efforts. At the same time, a little caution may be suggested, so as to ensure that the Society itself possesses a definite knowledge of "the best methods." While experts all over the world are still investigating these subjects, and have the prospect of a good many more years of investigation before them, this Society seems to have arisen fully equipped for all the problems of infant life, and ready to instruct Physical Deterioration Committees and Borough Councils on "the best methods." We do not say they are wrong—we do not know exactly what their methods are—but we do not see on the Committee the names of many who will command public confidence in this particular line of work. The Report goes on to point out that practically the entire income of the Society has been devoted to the upkeep of the hospital, and that unfortunately the expenditure has considerably exceeded the income. This is a not uncommon experience in hospital management, but the Society may depend on it that they will not fail of support if their methods commend themselves to the public and the medical profession. It is suggested that the hospital may before long be removed from Hampstead to a more central part of London, in order to bring it within reach of the medical students, who are at present inadequately instructed in reference to infant feeding. This anxiety over the welfare of medical students appears to be uncalled for, and the removal of the babies from the heights of Hampstead into the centre of London would be anything but an advantage to the parties most concerned. It is admitted by all that fresh, bright air is one of the most necessary things for the preservation of infant health and happiness, and that is not obtainable in central London during, at least, six months of the year. If the medical student will not journey to Hampstead in search of knowledge, it must be remembered that some opportunities of acquiring it are still available in central London both at the general and the special hospitals.

The medical Report of the Infants' Hospital is a document of considerable interest, but disappointing in that it leaves out so many details which members of the medical profession would desire and expect. As the hospital is open only to "infants suffering from disorders or diseases of nutrition," it is clear that a fine field is available for the investigations of the acting staff, and that valuable conclusions might be arrived at of immense benefit to the profession at large. We fail to find any such results in this Report, which is written by one of the staff, and is apparently intended to impress the public rather than benefit the profession. During the year 183 cases were dealt with in the hospital, of whom thirty died, ninety-four made good recoveries, and the remainder were disposed of in other ways—sent to general hospitals for acute disease, etc. The mortality appears to be a high one, but is airily dismissed by the writer, who regards mortality statistics as of no value. On the subject of the recoveries he speaks more decidedly; for "with very few exceptions, it may be said that the whole of these infants would probably have died but for the existence of the hospital." This is indeed something to be proud of, but we presume that the statement is intended for the general public and not for experts. The precise condition of the infants on admission, and the character of the results obtained are worked out in a peculiar manner by giving certain "marks" to each patient, and elaborate tables are published. These are of no scientific value, unless the writer's methods are accepted as correct, and it is open to very grave question as to whether they can be so accepted. A table gives the "particulars of the deaths;" but here again we look in vain for anything of value. for it only includes the age, the weight, the time in the hospital, the "weight index," and occasionally an indication as to the presence of some disease. In the majority of cases there is no statement of the cause of death, and in no case is it mentioned as to whether a necropsy had been performed or not. Some clinical records are given, in a style which is suggestive of the advertisements of quack medicines: "At this time I proceeded to make a refinement in the diet so delicate that I myself regarded it, at the time, as carrying out our principles of precise adaptation almost to the point of absurdity. The result was a revelation. From this time the infant made steady improvement," etc. The Report closes with thanks to his consulting colleague and to his acting colleagues for their valuable services to the hospital, and with an expression of satisfaction with the manner in which the matron and sisters have performed their duties—a conclusion quite in the best style of the Report of a General Committee at a hospital. Altogether this is a striking document which is unlike any medical Report we have ever read, and on the whole we are inclined to prefer the older style of Report, for at least something of value was to be learned from its perusal.

Abstracts from Current Literature.

Medicine.

Gonorrhœal pericarditis ('*Archives of Pediatrics,*' 1904, *vol.* XXI, *p.* 919). —**F. Huber** reports a case in a girl, aged 3½ years. She was taken acutely ill with a swollen ankle. Temperature 104° F. The opposite knee became painful. On the third day pericardial friction sounds and a loud systolic murmur over the precordial region were present. The urine contained a faint trace of albumin, an excess of indican, and leucocytes from vulvo-vaginal catarrh. For a few days vomiting was incessant. The vaginal discharge, showing gonococci, became more profuse. Pericardial friction sounds continued present for several weeks. No signs of effusion could be detected on percussion. The systolic murmur was irregular, and dependent on the heart's action. The child made a good recovery, and several months later there was no evidence that the heart had been infected. Of the different cardiac structures the endocardium is most often affected, sometimes with an ulcerative inflammation ending fatally. Pericarditis rarely occurs alone. It is usually benign and runs its course without manifest symptoms. It may be of the dry variety or attended with exudation, usually serous, occasionally hæmorrhagic. Beurmann has reported a purulent case. Sometimes several serous surfaces are involved. EDMUND CAUTLEY.

A case of infantile paralysis of the abdominal muscles ('*Johns Hopkins Hospital Bulletin,*' *January*, 1905).—**William Burgess Cornell** records a case in a male child of 21 months. About fourteen days previous to admission the patient had had a feverish attack lasting three days, during which he almost constantly slept. After this his parents noticed that he could not sit or stand. On admission, the patient's right leg and left arm were paralysed. Fourteen days later the child could walk and use his limbs moderately well. Three weeks after admission asymmetry of the abdominal wall was recorded. Four months after the onset of the disease there were no visible signs of paralysis of the limbs. The right side of the abdomen ballooned on the intra-abdominal pressure being raised by crying. Apparently the obliqui, transversalis, and half the rectus on the right side were paralysed. It seems that the author did not deem it wise to administer an anæsthetic and record the electric reactions, for he satisfies himself by stating that the child cried whenever an attempt to apply a current was made. The writer points out that infantile paralysis of the abdominal walls is rare, that Seeligmüller did not see any in his series of 75 cases of infantile paralysis. Sinkler recorded 340 cases of infantile paralysis, none of which had the abdominal muscles affected. Duchenne fils records one case, Birdsall one, Bernheim and Leiner one each. Apparently the above case is the first to have to come to the Johns Hopkins Hospital. **Frederick Taylor** (*'Reports of the Society for the Study of Disease in Children,' vol.* III, *p.* 246–7) reports the case of a girl of 14 years with acute anterior poliomyelitis who had extensive paralysis of both lower extremities. The abdominal muscles were very weak. The recti could not be felt to contract when she raised herself in bed. Contraction only occurred in the upper fibres of the right external oblique muscle. With galvanism K.C.C. was > A.C.C. in all cases. There was no obvious bulging in the case. There was also exceeding weakness of the lumbar muscles. The opinion was expressed at the meeting by A. H. Tubby that the trunk muscles in cases of infantile paralysis were as much primarily involved as the limbs. Frederick Taylor, in his reply, narrated that he had recorded a case of paralysis of the abdominal muscles after herpes zoster. The muscles in the right and upper part of the abdomen corresponding to one or two intercostal nerves were paralysed, and when the other muscles were contracted this portion was driven outwards so as to form a prominence. OTTO GRÜNBAUM.

Persistent low temperature (*' L'Echo Med. du Nord,'* February, 1905) —**Le Fort** and **Bachmann.** A rachitic girl, aged 2½ years, was admitted into hospital in January, 1903, with tuberculous bone trouble in both hands, both forearms, and one foot. Four operations were performed; the last in October, 1903, was followed by a fall of rectal temperature to 35·1° C. In January, 1904, for one week the temperature was only once over 35°C, then bronchitis set in with a temperature from 34·5° to 37°C for a fortnight, the hypothermia returned and continued till an attack of measles in August followed by improvement. During a period of eight months the mercury fell to the end of the scale usually marked on thermometers. In May and June the lowest verified records were 33·7° C. (92·66° F.). In March, perhaps due to meat-juice diet, segments of tape-worm were passed. These disappeared in November, not as the result of treatment; the worms may have been the cause of 2·5 per cent. eosinophiles in the blood-count.

T. P. BEDDOES.

Persistent ductus arteriosus (*' Hygiea,' p.* 225, 1904).—**Dalsjo.** Patient, aged 11 years, had a loud systolic-diastolic murmur best heard in the second left intercostal space; a loud thrill, felt behind and over the carotid and subclavian arteries; second sound accentuated over the pulmonary valve; dulness at the sternal ends of the first and second intercostal spaces; over this area skiagram showed a marked shadow. The heart was greatly hypertrophied, there was no cyanosis. Another patient was aged 17 years, without cyanosis. There was little accentuation of the second sound over the pulmonary area. A murmur extended to the carotid and subclavian arteries. Skiagram showed a shadow in the first and second left interspaces. The only sign against persistance of the canal and in favour of contraction of the pulmonary artery was the systolic nature of the murmur best heard in the second left intercostal space. T. P. BEDDOES.

Enuresis in children (*'Berliner Klinische Wochenschrift,' August* 29, 1904).—**T. G. Rey**.—The author thinks that enuresis must be considered a physiological condition during the first 10 months of life, but if it continues for longer than this, and especially if it continues beyond the third year, some pathological cause is present. He draws attention to the importance of a careful chemical and bacteriological examination of the urine in all cases, and of an examination of the bladder in children who are old enough. Regular meals and careful dieting are important factors in the treatment; and he advises a bitter tonic containing hydrochloric acid before meals. P. LOCKHART MUMMERY.

Purpura complicating scarlet fever (*'Lancet,' April* 8, 1905).—**Miller** records a very interesting case in which purpura appeared during the course of a case of scarlet fever. The patient was a boy, aged 4 years. The case was a fairly severe one, complicated by otorrhœa. Fourteen days after the commencement of the illnesss the general condition was good, and the temperature normal. Three days later the thermometer registered 102°F, and on the following day the glands in the neck were enlarged on both sides. The swelling gradually diminished after this, but one morning hæmorrhage was observed in the tissues around the left eye, while epistaxis was also present. The temperature rose slightly. Next morning the ankles showed a hæmorrhagic condition, and at night similar hæmorrhagic discolorations were noted over the sacral region, right hip, and both wrists. The subcutaneous tissues over the hip and wrists were swollen. The patient was now in a semi-comatose condition, very restless, and crying out as if in pain. Respiration and pulse rates were increased, while the lips were pale. Temperature was 101°F at 6 a.m. and 100·8°F at 6 p.m. On the following morning the hæmorrhages had increased in size, the one in the sacral region extending upwards towards the neck and outwards; the one over the right wrist extended upwards for about four inches and externally across the whole breadth of the forearm, whilst that over the left wrist extended laterally across the arm and upwards as far as the elbow. There was also more swelling of the underlying tissues. The patient gradually became worse as the day advanced, uræmic symptoms developed, and death occurred at 6 p.m. Shortly before death the temperature was 100·6°F. There were no other clinical signs beyond those mentioned. There was neither blood nor albumin in the urine. The gums were normal. There was no hæmorrhagic tendency in the family, and two other brothers, who developed scarlet fever at the same time, have since recovered without showing evidence of purpura. Astringent treatment used internally, the writer remarks, failed to produce any beneficial effect. JAMES BURNET (Edinburgh).

A case of cerebral tumour (*'Polyclinic,' March*, 1905).—**James Taylor** reported the case of a girl, aged 12 years; four weeks' history of loss of power in left arm and leg, with daily headache and vomiting. On examination the left face, arm, and leg were found to be hemiplegic, slight anæsthesia, especially of the leg. The visual fields showed quadrantic defect in the left lower half of the field of each eye—intense double optic neuritis. These signs indicated a tumour in the region of the posterior part of the right internal capsule. There was no sign of tubercle or syphilis. Complete rest in bed, with small doses of iodide of iron, at once produced a marked improvement in all her symptoms, the headache and vomiting completely ceased, the visual fields became practically normal, and the optic neuritis subsided. This improvement was, however, soon followed by the appearance of two fresh signs, viz. a slight tremor in the left arm, worse on voluntary movement, and also weakness and rigidity in the right leg, with ankle clonus and increased knee-jerks. This seemed to indicate that the growth was extending across the middle line, but the complete absence of headache and vomiting, and the almost entire disappearance of the optic neuritis still remained. The child later became completely paralysed on the right side, with persisting weakness on the left. ALEC H. BREWER.

The offspring of tabetics and juvenile tabes (*'Rev. des Malad. de l'Enf.,' March*, 1905).—**M. Milian** gives an interesting account of the families of 26 tabetics, 20 men and 6 women, 19 of whom were married before becoming tabetic. He also gives statistics from **Raillard** (*'Thése de Bordeaux,'* 1904) and from **Pitres** (*'Journ. de Med. de Bordeaux,'* 1903), and derives therefrom the following conclusions: The fecundity of tabetics appears to be diminished, the proportion of sterile marriages being very large. As the same phenomenon is observed in the families of syphilitics, it is probable that this diminution of fecundity is attributable more to syphilis than to tabes. The same argument applies to the great mortality among children of tabetics. The majority of observations published as cases of hereditary tabes are those of Friedreich's disease. There are, however, undoubted cases of hereditary tabes, as published by Remek and Babinski, but these constitute an almost disregarded proportion. The small proportion of juvenile tabetics the offspring of tabetic parents, as compared with the large proportion of those who are the offspring of syphilitic parents, favours the idea that hereditary syphilis is the direct cause of juvenile tabes. The proportion of children of tabetics who are the subject of nervous affections of all kinds is large; but it does not appear that the tabes should be held directly responsible for them, since firstly, hereditary syphilis causes the same predisposition to nervous affections, and secondly, in the families of tabetics the children born prior to the appearance of syphilis or tabes present an equal predisposition to these affections. If the children of tabetics frequently have defects of the nervous system, it is because they have inherited a predisposition which localised the syphilis in the spinal cord of their parents, and it is not apparent that the supervention of tabes materially increases that predisposition. VINCENT DICKENSON.

On jaundice and hepatic disturbance in the cyclical vomiting of children (*'La Ped. Prat.,' March*, 1905).—**Richardière** contributes an interesting paper on this disease, known as cyclical or arthritic vomiting, or vomiting with acetonæmia. This name should only be applied to cases where the child is seized with several different attacks separated by a variable interval of the following kind: Without apparent cause and without error in diet, vomiting commences abruptly of food, bilious, or aqueous matter. The vomiting attacks are repeated, with a variable frequency, either spontaneously or occasioned by movement or by attempts at feeding, often without nausea, and resembling the regurgitation of tuberculous meningitis. Rapid prostration supervenes, the face is pinched, and the abdomen retracted. After a variable number of days, it may even be two or three weeks, the vomiting suddenly ceases and convalescence is rapidly established.

The presence of jaundice in the course of cyclical vomiting has been previously observed, and is by no means exceptional, and moreover, in studying the records of those cases in which there has been no jaundice, symptoms referable to disordered hepatic action have been often noticed, such as urticaria, enlarged and painful liver, and bile-tinted mucous stools. The part played by the liver being evident, the question remains as to whether the liver affection is primary or secondary to intestinal mischief. The children attacked are usually in robust health whose intestinal functions act normally, and it is quite exceptional that an attack is provoked by errors of diet. Besides, as soon as the vomiting has stopped, the appetite returns almost immediately, the nausea subsides, digestion proceeds normally, and the constipation usually present during the attack disappears, this sudden subsidence being quite at variance with what is observed usually in gastro-intestinal affections. The part played by the liver in the elimination of acetone may also explain the acetonuria and sour odour of the breath. The author considers that the liver may thus give rise to a syndroma rather than to a special disease, and these cases fall into three groups: (1) attacks of vomiting in children whose hepatic functions are affected by the bilious temperament, hereditary cholæmia, or rheumatism; (2) rarer cases, where the hepatic functions are deranged by intestinal disorders, especially by constipation; (3) in which the derangement is temporary and caused by influenza, measles, or during an attack of appendicitis.

VINCENT DICKINSON.

Paradoxical perspiration (76, '*Kersammlung Deut. Naturforscher u. Aerzte*,' *September* 21, 1904; '*Munch. med. Woch.*,' *No.* 45, 1904, *p.* 2027). —**Zappert** has recorded the occurrence of an instance of this condition in a child. By paradoxical perspiration we understand a form of perspiration which occurs only on exposure to cold and yields to the influence of heat. In the case in question perspiration was localised to the skin of the dorsum of the upper extremities, of the back, and of the anterior aspect of the thorax; the palms of the hands, the axillæ, the forehead and lower part of the body were not affected. This paradoxical sweating was observed to occur periodically during the winter months. It had first made its appearance at the age of two years and now seemed to be gradually subsiding. Zappert considers the condition to be a reflex neurosis and to indicate the existence of a spinal sweat centre. E. P. BAUMANN (Johannesburg).

Acquired syphilis in childhood ('*Munch. Med. Woch.*,' *No.* 46, 1904, *p.* 2069).—**Glück** contributed a paper on this subject to the recent Congress of the Deut. Naturforscher u. Aerzte. Acquired syphilis is said to be a rare condition in children, but, during the last decennium, Glück met with no less than 215 cases, or 6 per cent. of his total number of cases of syphilis, in individuals of under 14 years of age. The primary lesion was generally extragenital, *e. g.*, affecting the lips, tongue, tonsils, or other parts of the mouth. It affected the genital organs in only three cases. A true, hard chancre was present in only six cases; generally the primary lesion took the form of a papular eruption. Swelling of the lymphatic glands was a common symptom. Exanthems appeared in only 32 per cent. of the cases; 50 per cent. of the cases presented specific affections of the larynx. Headaches, alopecia, and psoriasis of the soles and palms rarely occurred. The prognosis is good, for the disease yields readily to treatment. Recurrences are frequent, but the tendency to recurrences diminishes markedly within three years of the date of infection. The occurrence of tertiary symptoms can be prevented by proper antispecific treatment.

E. P. Baumann (Johannesburg).

Pseudo-membranous bronchitis (*'La Pediatrie Prat.,' January*, 1905). —**Menetrier** relates the case of a boy, aged 2 years, who for two months had coughed up pieces of membrane of a white colour, evidently, by their shape, being casts of bronchial tubes. The child had had repeated attacks of bronchitis preceding this expectoration of membrane. On examination, there was slight dulness over the upper two thirds of the left lung, with harsh breath-sounds and large mucous râles and some subcrepitant râles. There was no fever. Five days later the dulness and harsh breathing had moved, occupying the lower two thirds of the left lung, and the râles had disappeared. The false membranes resembled cooked macaroni, branching like the bronchi and diminishing in size up to fine threads; they were solid and firm. A cultivation from them gave a pure culture of pneumococci, and injected into mice produced a pneumococcal septicæmia. There were no diphtheria bacilli. The microscope showed the membranes to be composed of lamellated fibrin with a few epithelioid cells and polynuclear leucocytes.

J. Porter Parkinson.

Pathology.

Pulmonary anthrax in a child of four (*Soc. de Pédiatrie de Moscow, October* 13, 1904; *'Archives Générales de Médecine,' February* 21, 1905.— **N. N. William.**—The patient was admitted into hospital seriously ill, unconscious, cyanosed, imperceptible pulse, rapid breathing with dry râles. The illness had lasted three days. Post-mortem showed marked œdema of the mediastinum, with swelling of the glands. The lower lobe of the left lung was occupied by a hæmorrhage. Blood smears showed numerous anthrax bacilli; some were found in the spleen. Cultures gave typical growths. The diagnosis could not be made during life, as the child did not expectorate, and the occupation of the father (a porter) gave no indication.

T. P. Beddoes.

Diphtheria, scarlatina, pleurisy, and pneumonia (*'Archives Générales de Médecine,' February* 21, 1905).—**Detot** and **Le Play.**—A child, aged 3 years, was admitted into hospital with acute diphtheria, for which intubation was used and 30 c.c. of serum injected. The morning and evening temperatures were 38° C. (100° F.) and 40° C. (104° F.). The left base was slightly dull, with scattered fine mucous râles. In a week's time a diffuse bright red rash appeared spreading to the trunk next day. The throat was red, covered with pus, and the tongue had prominent papillæ. The lungs were slightly dull at both bases, with sibilant râles, and middle-ear disease supervened, with a perforation of the tympanum exuding fœtid pus. Seventeen days from admission there was effusion into the left pleura, with dulness and absence of breath sounds to the spine of the scapula. On puncture in the seventh space serofibrinous fluid was withdrawn. Next day puncture in front external to the nipple line yielded fœtid seropurulent fluid with streptococci (so virulent that 10 c.c. of a broth culture killed a guinea-pig weighing 450 grammes in fourteen hours). In four days' time puncture behind gave exit to very fœtid pus mixed with air. Bell sound was heard over the whole of the left lung. Post mortem showed a gangrenous cavity in the posterior of the left lung. The lining membrane of the middle ear and of the mastoid was covered with thick pus. T. P. BEDDOES.

Pneumococcic infection ('*Archives Générales de Médecine*,' *February* 28, 1905).—**Nathan Larrier.**—A full-term child of a healthy mother was born in the left occipito-anterior position, after a difficult labour. It was operated on for a harelip when four days old. Everything did well for three days, then oozing from the suture wounds was noticed; the wound suppurated for nine days, when swelling of the right shoulder-joint was noticed; three days later it died, one day after admission into hospital. The shoulder-joint contained typical thick green pneumococcic pus, giving characteristic growths on agar and on serum; fatal to mice; smears from blood and spleen showed lanceolate cocci, with capsule, stained by Gram (Fränkel). Similar cocci were found on the lip. For the record of previous cases reference is made to the statistics of Cave, published in the 'Lancet' on January 12, 1901. It is suggested that the right shoulder became affected because most liable to injury at birth from the presentation being left occipito-anterior. The lungs did not show broncho-pneumonia or pleurisy. The heart was normal; there was no meningitis. T. P. BEDDOES.

Three cases of exencephalia ('*American Journal of Obstetrics*,' February, 1905).—**Henry F. Lewis** brought before the Chicago Gynæcological Society three cases of exencephalia. The exhibitor having classified the exencephalia into the following genera—proencephalus, hyperencephalus, exencephalus proprius, anencephalus, according to the site of the bony defect or encephalic tumour—put forward in explanation of their occurrence the two general etiological factors: (1) Adhesions of the cephalic fold of the amnion, at any early embryonic period, to the underlying tissues of the cephalic end of the embryo or pressure of a contracted amnion upon that region; (2) circulatory disturbances which result in fœtal hydrocephalus by pressure from within the skull prevent the closure of the vault; consequently, there results a defect in the wall which permits of the escape of the intra-cranial contents.

J. HOWELL EVANS.

Epidemic dysentery, with special reference to its occurrence in children ('*Wien. Klin. Woch.*,' 1904, *Nos.* 25, 26).—**Carl Leiner.**—The following dysentery cases were treated between August and October, 1902, at the Carolinen Kinder Hospital. The disease occurred in two different families. In one family three children were sick; in the other two children and their mother suffered from dysentery. In addition, there was one isolated case in a child, aged 2 years. For these seven cases no common source of infection could be demonstrated. Of these seven cases, five were cured. Two died, one a 2-year-old and the other a 5-year-old child. The five cases that survived presented the typical picture of dysentery without complications, whereas the fatal cases presented the picture of the so-called typhoid type of dysentery. The picture presented by the latter can be summed up as follows: The children were collapsed, the sensorium clouded. The skin was dry and its elasticity diminished. In some places it was cyanotic. The surfaces of the body, which were exposed to pressure—that is, the back, the extensor surface of the elbows—were covered with small and large hæmorrhagic areas. The mucosa of the mouth was dry, as was the tongue. The action of the heart and respiratory movements were increased. The pulse was thready. The abdomen was sunken in, and the contracted loops of intestine were easily palpable. The sphincter ani was completely relaxed, and the anal mucosa was visible and in part prolapsed. Stools were passed involuntarily about fifty times in twenty-four hours. These were particularly offensive, muco-purulent, dirty grey in colour, occasionally containing some fæces mixed with mucus and bloody purulent fluid. In the patient that died on the tenth day not only was the colon but also the lower part of the ileum diseased. In the second case, death in the fifth week, the lower part of the colon alone was diseased Microscopic examination of the fresh stools for amœbæ was negative. The specimens stained by Gram showed very few Gram negative bacilli. In the pus cells rather thick bacilli were frequently found. This condition was particularly typical in three cases that were examined in the first days of their sickness. On the agar plates made from the stool only one kind of colony (in pure culture) developed in twenty-four hours. The growth was abundant. The colonies were rather large, opaque near the centre, slightly iridescent near the periphery. On lifting the covers of the plates a peculiar, semen-like odour was noticeable. The bacilli which composed these colonies were non-motile and never produced gas in sugar-agar culture medium. They grew in gelatine plates in leaf-like colonies (like typhoid B.). They produced cloudiness in bouillon and peptone-water. In peptone-water, from the fifth day on, traces of indol could be found. On potatoes a yellowish-brown colony was grown. The bacillus never coagulated milk and was pathogenic in animal experiments, whether injected subcutaneously or intra-peritoneally. In three of the above cases these bacilli were present in pure culture; in the other cases, though these bacilli were present in very large numbers, they were associated with coli, and in one case with streptococci. In view of the above bacteriological examination, a connection between the bacilli found and the dysentery seemed very likely, especially as the peculiarities of the bacillus, its decolorisation with Gram, its lack of motility, its inability to produce fermentation in grape-sugar, its inability to coagulate milk, etc., agreed with those described by Kruse, Shiga, and Flexner for their dysentery bacilli. The definite proof of an etiological connection between the bacilli and the cases of dysentery was furnished by the agglutination tests. The serum of the patients showed from the eighth day on definite agglutination of the bacillus obtained from the stool and in dilution of 1 : 50 and 150. In two cases only, which were mild and convalesced in a week, did the serum fail to agglutinate, though the bacilli obtained in pure culture from their stools were agglutinated in the above dilution, with the serum of the other cases.

To determine the relation between Leiner's bacteria and the dysentery bacilli already known, further agglutination tests were undertaken with Shiga, Kruse, Flexner, typhoid, paratyphoid, and coli. With the exception of Flexner's bacillus, none of the above showed any agglutination with Leiner's serum in a dilution of 1 : 50. This made it evident that he was dealing with a Flexner bacillus and not with the Shiga-Kruse type. Cultures made in mannite-litmus agar showed that the bacillus had culturally the same characteristics as Flexner's; both produced a change from blue to red in the culture medium, in 24–48 hours, which the Shiga-Kruse bacillus does not do. In addition to the above evidence of the identity of Flexner's and Leiner's bacilli, Leiner produced, by repeated subcutaneous injection of Flexner's bacillus in one rabbit, and the injection of Leiner's bacillus in another rabbit, a highly active serum. In the course of eight weeks he was able to produce in this way a Flexner animal immune serum, which agglutinated Flexner's and Leiner's bacilli, in the dilution of 1 : 100, and also produced an immune serum in the rabbit treated with Leiner's bacilli, which agglutinated both Leiner's and Flexner's bacilli in the dilution of 1 : 100. Both these sera agglutinated Shiga-Kruse only slightly in a dilution of 1 : 30. In contrast to the Shiga-Kruse type, Leiner's bacilli and those of Flexner showed very little toxicity when injected into animals. Leiner was also in a position to use a Shiga serum, which agglutinated at 1 : 1000 Shiga and Kruse bacilli, but which agglutinated in a dilution of only 1 : 50 Flexner's and Leiner's bacilli. From all the above it is evident that Leiner's bacilli are culturally and, as tested, very highly active sera identical with Flexner's. Recently Jürgens ('Deut. Med. Woch.,' No. 46, 1903) described a dysentery epidemic in which the Flexner bacillus was the cause. This author sent Leiner one of his cultures, which showed the same behaviour to the above sera and the same cultural characteristics as the bacilli found in Leiner's cases. Both series of cases thus correspond to those due to the Flexner bacillus. Here, then, is the proof that the Flexner bacillus must be separated from the Shiga-Kruse, as they present definite differences, also the proof that the dysentery of adults and children is not invariably due to one and the same bacillus. In the future all attempts to produce an immune serum against dysentery will have to take into account the last mentioned fact, that dysentery can be caused and is caused by more than one kind of bacillus. GEOFFREY PLANTAGANET.

Congenital occlusion of the bowel at the ileo-cæcal orifice ('*Lancet*,' *April* 8, 1905).—**Catto** exhibited a specimen of this defect at the Pathological Society on April 4th. Enterostomy was performed, but death occurred on the third day. The infant was a well-developed male. The other organs were normal. The middle two fourths of the small intestine were congested, and were covered with recent fibrinous lymph, the coils adhering to each other and to the left anterior abdominal wall. The contents for the same area were of watery consistence and of pea-soup colour, becoming greener and more inspissated as the cæcum was approached. The large intestine was the size of a pencil and empty. It was bound to the posterior abdominal wall, having no mesentery developed. The obstruction was due to a complete septum at the ileo-cæcal orifice, probably produced early in embryonic life. JAMES BURNET (Edinburgh).

On a case of lymphosarcoma of the mediastinum ('*Riforma Med.*,' 1904).—**Signer** reports this case, which is of special interest on account of its rapid course, which lasted only a month from the first symptoms. When the case came under observation, there was shallow breathing often interrupted by dry cough, the upper part of the right thorax moved more than the left, small, frequent pulse, weak cardiac impulse in sixth interspace. Semi-erect posture, the horizontal provoking cough, dyspnœa, and difficulty of swallowing. Febrile temperature and darting pains in neck and shoulders. Death took place suddenly during sleep. The autopsy showed a mass of irregular outline and hard consistence but somewhat elastic, which occupied all the anterior mediastinum, and was adherent to the sternum and the anterior part of the pericardium. Its colour was red with bluish streaks, the section greyish white, large vessels and bronchi were included in the new growth. The microscope showed a lympho-sarcoma originating from thymus. VINCENT DICKINSON.

Posterior-basic meningitis (*'Amer. Journ. Med. Sci.,'* 1905, *vol.* CXXIX, *p.* 266).—**H. Koplik** states that in an epidemic of cerebro-spinal meningitis in 1904, eight out of thirty cases were typical ones of posterior-basic meningitis. In age the patients were from 4 months to 5 years, six being under 2 years old. In all but one of the cases under 2 years of age the onset was sudden with fever and vomiting, then rigidity of the neck and, in some, convulsions. In other cases after the initial fever the child became stupid and "blind." The writer describes the symptoms as usually found in these cases. Optic neuritis was absent under 2 years of age. He attaches no value to Kernig's sign because of the age and spasticity. The leucocyte count was of no value as a diagnostic point between the affection and tuberculous meningitis. Lumbar puncture was not always successful in evacuating fluid. Only a few drops were obtained in one case under 2 years; in another 2–3 c.c. were drawn off at each puncture; in another, which developed hydrocephalus, 250 c.c. were obtained at one operation. In three of the six cases meningococci were found in the fluid. He gives details of some of the cases, including one in a boy, aged 5 years, due to a streptococcal infection. The course and symptoms were typical of basic meningitis without any retraction of the head. Koplik maintains that there are two forms of basic meningitis: (1) primary, due to the diplococcus intra-cellularis of Weichselbaum causing a primary inflammation of the meninges; (2) a second type, occurring in older children, and perhaps complicated by pneumonia or secondary to it. In other words basal meningitis is not invariably due to the tubercle bacillus or the diplococcus intracellularis. EDMUND CAUTLEY.

Therapeutics.

Excess of fat in the infant's diet (*'Archives of Pediatrics,'* 1905, *vol.* XXII, *p.* 1).—**L. Emmet Holt** regards disturbances of digestion due to excess of fat as quite as serious, if not quite so obvious, as those due to excess of proteid. In one case the result was that at eight months a fine, fat child had severe convulsions, and, later on, tetany and laryngismus stridulus. The liver was large, (?) fatty. The child had taken the excess of fat for many months without any apparent disturbance. Then came sudden and severe nervous symptoms of long duration, prolonged disturbance of digestion and nutrition, and passage of stools consisting of almost pure fat. In a second case, in spite of, or because of prolonged excess of fat in the food, the infant had constipation, slight rickets, acute disturbances of digestion and convulsions. He appeared a fat, healthy child, but had no teeth at eleven months, and craniotabes at eight months, when he first had fits. A third patient developed convulsions at four months. A fourth had habitual vomiting and serious gastric catarrh, finally cured by lavage. A fifth developed eczema, habitual constipation, and, finally, habitual vomiting. Milder cases showed gradual loss of appetite, disturbances of digestion, and a slow loss of weight. In the next stage there is habitual vomiting or regurgitation of food, fermentation, and the production of gastric catarrh. Sometimes the intestinal digestion is upset. Chronic constipation may be aggravated, and the undigested fat is passed as hard, dry, gray fæces. The convulsions are due to the digestive disturbance, possibly to auto-intoxication. Although infants vary much in their capacity to digest fats, Holt holds that there is no advantage in raising the fat to more than 4 per cent., and harm may result from the use of higher percentages. He is not in favour of raising the percentage of fat to relieve chronic constipation. Morse stated that ammoniacal urine is a result of too much fat. Winters regarded the cases of convulsions as due to too frequent feeding, and not to excess of fat; the constipation was, he thought, due to insufficiency of proteid.

EDMUND CAUTLEY.

The treatment of coryza ('*Heilkunde,' April*, 1904; '*Allgem. Wien. Med. Ztg.,' No.* 42, 1904, *p.* 462).—**R. Fuchs** has used forman with excellent results in numerous cases of acute and chronic coryza and catarrh of upper respiratory passages. He strongly recommends its further use. The drug may be applied on cotton-wool, or as an ointment, or be taken internally in the form of a lozenge. E. P. BAUMANN (Johannesburg).

The treatment of incontinence of urine by atropine ('*La Pediat.,' January*, 1905).—**D. Naud** in a recent thesis advises the administration thus: For a child of six years, neutral sulphate of atropine 1 centigr., distilled water 10 grams. Five drops of this solution are to be taken three times daily in a teaspoonful of sugared water. The dose is increased by one drop daily up to thirty drops, *i. e.* ten drops at a time. Usually eight days of this treatment are sufficient to effect a cure. In obstinate cases the treatment is suspended after eight days and resumed in a fortnight in increased doses, according to the susceptibility of the patient. As a rule, the dose for a child of two years should not exceed twenty drops a day, and for a child of fourteen years, sixty drops a day. Nocturnal incontinence is treated by giving a third of the maximum dose in the evening only: thus for a child of six years to commence with a dose of ten drops, and increase up to twenty drops at bedtime. VINCENT DICKINSON.

Otology, Laryngology and Rhinology.

Excessive curettage of the naso-pharynx ('*Arch. Internat. de Laryngologie, d'Otologie, et de Rhinologie,' January*, 1905).—**Escat** describes the case of a young man, aged 17 years, the son of an agent, who respired very badly by the nose, was deaf, and who had consulted a specialist of undoubted ability three years previously. Some adenoid vegetations were removed, but the beneficial results of this operation lasted only for a very short time. For a few months, subsequently, the boy breathed well through the nose, no longer slept with his mouth open, and heard fairly well; but at the expiration of a year the adenoids reappeared. He was again taken to the same specialist, who advised curettage. The operation was a lengthy one, and at least a quarter of the pharynx was curetted. The immediate result of the operation was severe dysphagia, continuing for three weeks, but as cicatrisation progressed the boy breathed more and more through the mouth, and less through the nose. The hearing power also diminished, and eventually nasal respiration became absolutely impossible. The boy was then brought to Dr. Escat, who examined him, with the following result: Typical adenoid facies, collapse of the alæ of the nose, complete nasal stenosis, pronounced deafness, especially on the left side, great depression of the tympanic membrane. Right, $\frac{6}{100}$; left, $\frac{2}{100}$; watch neg. Rinné, Weber to right. The palate was adherent to the posterior pharyngeal wall, except that there was space to pass a probe behind the right pillar of the fauces. Dilatation was attempted, but the cicatricial tissue proved too dense for this. Simple division of some of the tissue enabled Escat to make an opening the size of a franc piece. This was kept open by bougies until complete cicatrisation had occurred. The results of this mode of treatment were not satisfactory, and the writer proposed to perform a similar operation, in this case, to the one described by Moritz Schmidt. The description of this case is followed by a short account of the points to be observed in the removal of adenoid vegetations.

RICHARD LAKE.

On the distribution of adenoid tissue in the nasal mucosa ('*Archiv. Internat. de Laryngologie, d'Otologie, et de Rhinologie,' January February*, 1905).—**Professor Poli.**—It will be seen from the researches of Zückerkandl and others that there is considerable disparity with regard to the existence or otherwise of a basilar mucous membrane in these tissues and at various other points. Professor Poli considers that this disparity, in mammals and human beings, is due to the different ages at which the subjects have been examined, and also to the topographical distribution of the tissues in the nasal fossa. His researches were confined to a series of mammals—calves, lambs, mules, dogs, cats, horses, rabbits, and monkeys; and human beings from the fœtus up to forty-five years of age. In each case he had carried out methodical observations with regard to the respiratory and olfactory organs, and had especially directed his attention to the mucous membrane of the turbinates and the olfactory and ethmoidal regions. In human beings he had studied the condition of the mucosa and the turbinate bones, and of the mucous membrane of the respiratory and olfactory regions. The tissues of animals, usually preserved in perchloride of mercury, were examined twenty-four hours after death. Serial sections were cut and stained by various methods. His results are discussed firstly with reference to age, and secondly as regards topographical situation. In newborn animals (the dog and cat) a mass was found in the turbinates close to the cartilage. In human beings, at the age of seven days, there was found in rare instances a leucocyte infiltration in the chorion, which could scarcely be considered true adenoid. There were no follicles and no homogeneous basilar membrane. In a series of five individuals, ranging in age from two to three and a half years, there was a mass of adenoids in the respiratory region, sometimes limited to the most superficial part of the chorion, at other times extending throughout the region occupied by the glandular alveoli. In cases in which the basilar membrane was more developed, the adenoid mass was larger, and the epithelium more invaded by leucocytes. Professor Poli was much struck by the small number of lymphocytes present in the mucosa of the mammals examined, these being very rare in the tissues of the chorion and the glandular acini, and being more numerous in the deeper than in the superficial parts. As regards the topographical distribution, in human beings adenoid vegetations are most frequently found in the respiratory region, more especially in the inferior and middle turbinates. Zückerkandl has observed lymphatic masses, in the form of follicles, near the choanæ in some animals. In conclusion, the author discusses the question as to whether adenoid tissue and follicles should be considered as a normal or pathological formation, and gives the views of various writers on this subject. RICHARD LAKE.

Congenital stridor ('*Centralbl. f. Kinderheilk.,*' 1904, *No.* 11, *p.* 442).—**E. Meyer** showed an instance of this condition at Berliner Laryngologische

Gessel. on April 15, 1904. The case was that of a child, aged 11 months, in whom the condition was first observed at the age of 2½–3 months. There was marked inspiratory stridor with retraction of the intercostal spaces; the condition improved greatly in hospital, but was still very marked when the child coughed or was in any way excited. A successful examination of the larynx was made, and the vocal cords seen to functionate perfectly normally. The larynx could, therefore, be excluded in searching for the site of the obstruction, and there remained only the trachea. Attention was, therefore, directed towards the possible existence of an enlarged thymus pressing upon this structure. Percussion revealed the existence of dulness under the manubrium sterni, and under the Röntgen rays distinct enlargement of the thymus gland was obvious. In view of this Meyer decided to administer preparations of thymus in the hope of producing atrophy of the gland. Failing this, he intended later on to adopt operative measures to relieve the pressure. E. P. Baumann (Johannesburg).

Surgery.

The treatment of congenital dislocation of the hip (*'New York Medical Record,' January* 14, 1905).—**H. M. Sherman** gives his experience of twenty cases with twenty-eight hips treated by arthrotomy. The oldest child was aged 11 years and the youngest 10 months. In each case complete coaptation of the cartilaginous surfaces of the joint was obtained. In seventeen of the cases the hip-joint was in a stable position, with the head in the acetabulum, at periods varying from two months to six years after the operation. In the children who were operated upon while quite young there was no tendency to ankylosis, and the condition of the hip was quite satisfactory as regards movement and stability. In the children over 7 years of age at the time of operation there was a decided tendency to ankylosis and immobility of the hip. In eight hip-joints partial or complete dislocation was known to have occurred after operation. Mr. Sherman claims that the results obtained by arthrotomy are far better than those obtained by the Lorenz method, and the risk, he believes, is less.

P. Lockhart Mummery.

The treatment of adenoids (*'New York Medical Record,' November* 2, 1904).—**Walter Chappell** draws attention to several important points. There are several conditions which give rise to symptoms of adenoids and which it is important should be distinguished from them as treatment will otherwise be unsatisfactory. Among these conditions may be mentioned congenital high arched-palate, unusually small post-nasal spaces, anterior projection of the bodies of the cervical vertebræ, and malformations of the soft palate. Naso-pharyngeal adenoids, when they are causing earache or attacks of otitis media, should be removed, even though there is no morbid obstruction to nasal respiration. The author, in accordance with accepted custom in this country, believes chloroform to be dangerous for adenoid operations, and he advises either ethyl chloride or ether. Attention is drawn to an accident which may result from the operation if roughly performed, namely, tearing the soft palate away from the side of the naso-pharynx.

P. Lockhart Mummery.

Intussusception in an infant treated by resection and end-to-end anastomosis (*'Medical Record,' March 4, 1905*).—**Edward W. Peterson,** of New York, reports the case of an infant, aged 4 months and 20 days, who developed symptoms of acute intussusception two days before admission into the hospital. On admission the child was very ill and had all the usual symptoms of the condition. An elongated swelling could be felt in the position of the transverse and descending colon. The end of the intussusception could be felt *per anum* as a soft cylindrical tumour. At the operation it was found to be impossible to completely reduce the intestine, as the portion in the neighbourhood of the cæcum showed commencing gangrene. Four inches of the ileum, cæcum, and ascending colon were resected and the ends were anastomosed with a Murphy's button. Very severe shock was present at the end of the operation, and the child was very ill for some days. The button was found lodged in the anus on the fourth day, and was removed. The child recovered, and was discharged well on the fifteenth day after operation. P. LOCKHART MUMMERY.

The treatment of congenital dislocation of the hip (*'La Presse Médicale,' November 5, 1904*).—**Calat** reports the cases of ten children treated for this affection by the application of apparatus without operation, in all of whom there were good results. He expresses the opinion that in early infancy children with congenital dislocation of the hip can be cured by the application of suitable apparatus and careful attention to maintaining the joint in good position. P. LOCKHART MUMMERY.

Goitre in a new-born child (*'The Canada Lancet,' vol.* XXXVIII. *No.* 7 *March*, 1905).—**W. T. Burns.**—The day after its birth, the child, a female, became very cyanosed, the breathing being extremely laboured. This lasted for several minutes, when gradually the breathing became easier and the child regained its normal colour. An enlargement on the neck was noticed, which was taken to be a goitre. It was very pronounced, the tumour showing on both sides and in front of the trachea. These attacks of dyspnœa and cyanosis occurred frequently for the next few days. On the sixth day the child was free from them, and a distinct diminution in the size of the tumour was noticed. On the ninth day the child died. The autopsy showed a greatly enlarged thyroid gland of a consistency which was nearly fibrous. On each lobe were several cysts full of a clear fluid, and in the left one the remains of a large cyst which had ruptured. This rupture was probably the cause of the decrease in size of the tumour remarked on the sixth day. The gland was placed high up, being near the hyoid bone and very closely adherent to the trachea. E. J. COWEN.

A rare case of congenital diaphragmatic hernia (*'Riforma Med.,' No.* 48, 1904).—**Albanese** describes the case of a boy, aged 10, who wounded himself in the sixth left intercostal space, near the anterior axillary line, the bullet being extracted in the seventh left intercostal space close to the angle of the scapula. The following day he had fever and darting pain in the left side of chest and dyspnœa. A long suppurative process ensued, and about two months later he was seized suddenly with umbilical pain, radiating to the loins and right shoulder, vomiting, and obstinate constipation. Percussion was normal on the right side of chest; on left, normal resonance down to the fourth rib in parasternal line, fourth space in nipple line, and to fifth rib in anterior axillary line, below deep tympanitic resonance; posteriorly, normal down to fifth space, below the sixth complete dulness. Gurgling heard in fourth space. These physical signs were not always constant at different examinations and in different positions. Laparotomy was performed, and a hernia of the pyloric end of stomach found surrounded by omentum, with part of the transverse colon and small intestine, through a wide aperture existing in the middle of the central tendon of the diaphragm. Such a large opening could not have been produced by the traumatism, since the symptoms did not occur until some time after; on the contrary, the traumatism produced an encysted pyothorax and consecutive pulmonary atelectasis, hence the endothoracic pressure was lessened, and the abdominal viscera expanded rapidly through the large pre-existing hernial gap into the thoracic cavity, giving rise to the first grave symptoms of intestinal obstruction. VINCENT DICKINSON.

Urethritis in boys (*Thesis, Paris*, 1904).—**Genevoix.**—(1) Urethritis may be the first indication of tubercle in infants. Early discovery of the bacilli will enable a cure to be obtained. (2) External inflammation of glands or prepuce may extend to urethra; foreign bodies may be introduced. (3) The possibility of accidental gonorrhœal contamination should always be considered, as from use of contaminated toilet articles, bath, or towel, accidental contact with or from a bedfellow, or indirect infection. The diagnosis should always be confirmed by staining and culture. At home and at schools instruction should be given in the toilet of the genitals.

T. P. BEDDOES.

Review of Books.

LATERAL CURVATURE OF THE SPINE AND PELVIS DEVIATIONS. By RICHARD BARWELL, F.R.C.S., Consulting Surgeon to Charing Cross Hospital, etc., London, 1905. Sixth edition. Baillière, Tindall and Cox, Henrietta Street, Covent Garden. Post 8vo, pp. 100, Figs. 42.

THIS little monograph is a description of original thought and work in attempts to solve the difficult problems of lateral deviation of the spine and scoliosis. Mr. Barwell's writings on "amesiality" of the pelvis as a factor in the production of spinal curvatures are well known, and in this publication he discusses the whole question *in extenso*; and from our point of view he does excellent service in insisting upon the recognition of this element, and its removal as a necessarily antecedent condition to any successful treatment. The great importance of convincing the patient that his faulty position is due to a habit of "amesiality" is dwelt upon, and he must be taught to correct by voluntary effort the obliquity and version of the pelvis. Unless this be done all passive exercises are of little avail. Corsets and spinal supports receive adequate condemnation at the author's hands. The volume is the sixth edition of Spinal Curvature, thus clearly showing that there is a good demand for a carefully written and thoughtful treatise from the hands of an expert dealing with this intricate subject.

A. H. TUBBY.

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Original Articles.

PARATYPHOID FEVER.*

By Edmund Cautley, M.D.Cantab., F.R.C.P.Lond.

The name "paratyphoid fever" has been given to a febrile disease which in its course and symptoms is very like typhoid fever. Many of the cases so described are due to an organism closely allied to the bacillus of typhoid fever and others to an organism more allied to the colon bacillus. Hence considerable confusion has arisen and the name "paracolon infection" has been used for all cases due to organisms intermediate between these two bacilli. A study of the history and the bacteriology will bring into relief the origin of this confusion.

Acharde and Bensaude reported the first cases under the name of "infections paratyphoidiques." In one, a young woman, the organism was recovered from the urine. The case was complicated by femoral phlebitis and cystitis, or pyelonephritis. The other patient was an infant, aged 7 months, who had an attack of apparently mild typhoid fever, followed by suppuration in the sterno-clavicular joint. A like organism was cultivated from the pus. No agglutination test had been tried.

Primarily, confusion arose from Bensaude attributing psittacosis infection to a similar bacillus. Cases due to Gärtner infection have also been described as paratyphoid. Craig and White in 1902 reported cases due to the Bacillus enteritidis of Gärtner, and Parsons in 1905 reported two more such cases, in which Widal's reaction was negative, and definite clumping was produced with Gärtner's bacillus. The pyrexia had lasted for fourteen and twenty-one days with headache, malaise, pulse rate of about 90 per minute, and an absence of spots and splenic enlargement.

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* A clinical lecture delivered before the Medical Graduates' College and Polyclinic on February the 20th, 1905.

Under the name of "Bremen gastric fever" Kurth described five cases which gave a negative Widal reaction and had many of the symptoms of enteric fever. It is probable, but not quite certain, that these were cases of paratyphoid infection.

I think we are justified in taking the view that there are many intermediate organisms of the colon and typhoid group. Starting at one end of the scale, we have the Bacillus coli, and next in order the paracolon bacillus, paratyphoid bacillus *α*, paratyphoid bacillus *β*, and finally the typhoid organism. The Bacillus enteritidis of Gärtner and the Bacillus psittacosus are members of this same group.

Widal described the organism of paratyphoid under the name of the "paracolon bacillus." Schottmüller substituted the name "paratyphoid," and stated that the cultural differences between the typhoid and paratyphoid bacilli were specially marked on Piorkowski's medium. He subdivided the paratyphoid organisms into two groups, *α* and *β*, and thought there were probably intermediate forms. The differences between the *α* and *β* groups are that paratyphoid *α* is culturally like the paracolon bacillus, whereas the paratyphoid *β* bacillus is culturally unlike the paracolon bacillus, and produces a terminal alkalinity in milk. Both organisms give rise to typhoid-like symptoms, and in this respect differ from the paracolon bacillus. Thus it is fairly clear that the term "paracolon infection" includes at least three different kinds of organisms, and it is advisable that greater accuracy in nosology be adopted.

It is interesting to differentiate the recorded cases as far as possible in accordance with the bacteriology. Thus the paratyphoid *α* bacillus was found in the cases reported by Gwyn, Johnston (2), Buxton, Hewlett, Brion and Kayser, Pratt, and Schottmüller (2). One of Longcope's cases was a mixed typhoid and paratyphoid infection, due to the paratyphoid *α* bacillus or an organism intermediate between *α* and *β*. In two of Johnston's patients pure cultures of paratyphoid *α* were obtained from the blood. Two others were diagnosed by the agglutination test.

The paratyphoid *β* bacillus was found in the cases of Cushing, Strong, Hünermann, Kurth, H. Kayser (3), Schottmüller (4), Pratt (2), Feyfer and Kayser (14), Longcope and Van Ingen. Two of H. Kayser's cases gave no agglutination with the typhoid or paratyphoid *a* organisms. One gave a positive Widal with a dilution of 1 in 50, agglutinating the paratyphoid β bacillus at 1 in 100. Feyfer and Kayser's fourteen cases occurred in an epidemic at Eiberg in Holland. One was a mixed infection. The serum of all these agglutinated the paratyphoid β bacillus. Blood cultures were negative, perhaps because only small quantities were taken. Allen's cases were apparently due to paratyphoid β. In one the bacillus was recovered from the pus in the gall-bladder, due to an attack of cholecystitis during convalescence. The bacillus caused a terminal alkalinity in milk, but serum gave positive reactions with the organisms of Gwyn and Johnston. Widal and paracolon reactions were negative. The organism was probably an intermediate variety. A second case was complicated by cystitis and femoral thrombosis, and the paracolon bacillus was isolated from the blood and urine. The third case was a mild one, without complications, and the serum gave a positive reaction with the organisms found in the other two cases, and a negative Widal.

One of Pratt's cases was a mild one, due to the paratyphoid *a* bacillus, and was complicated by saphenous phlebitis. In the other two the paratyphoid β bacillus was isolated from the pus of a suppurative orchitis after supposed typhoid, and from gall-stones removed at operation for cholelithiasis four years after an attack of supposed typhoid.

The number of cases now on record is well over one hundred, and of these comparatively few were children under 12 years of age. This does not indicate any special insusceptibility in early life. More probably, on account of the indefinite character of the symptoms and the mild course of the disease, the patients are diagnosed as suffering from some febrile attack of unknown origin. In hospital practice such patients do not, as a rule, reach the in-patient department. In private practice an expectant treatment is adopted and the patient gets well. Even when the disease is diagnosed, or consultative advice is obtained and the possibility of the presence of one or other of these intermediate infections is suggested, it is often difficult or impossible to obtain confirmation by means of the serum reaction. Difficulties are raised by the relatives or the doctor on account of the mildness of the illness, and difficulties arise in obtaining cultures of the different organisms and carrying out the test. I am quite convinced that I have treated many such cases as hospital out-patients, and that certain patients I have seen in consultation for continued fever of unknown origin have been really cases of paratyphoid fever. I propose to refer shortly to five cases, two in adults.

Case 1.—Male, aged 4 months, was seen in consultation for fever and abdominal pain of one week's duration. The temperature was 102° F., pulse rate 156, and there were no other symptoms, except slight colicky pains. A diagnosis of paracolon infection was made. The fever lasted for nearly three weeks, subsiding gradually. The chart was that of mild typhoid fever. Widal's reaction on the tenth day was negative. The urine contained some pus-cells and was crowded with motile bacilli. Unfortunately, no special tests for paratyphoid organisms were adopted.

Case 2.—Male, aged 7 months, had had fever, varying between 101° F. and 103° F., for a week when I was asked to see him. He was irritable and presented a state of general malaise but no definite symptoms. The spleen could be felt. There was no diarrhœa. A diagnosis of microbial infection, probably paratyphoid, was made. The course was a mild one, ending in recovery without fresh symptoms or complications.

Case 3.—Male, aged 10 years, was admitted under my care at the Metropolitan Hospital on September the 24th, 1904, for supposed general tuberculosis. He had been ailing for five weeks, with general pains, constipation, wasting and, recently, some headache. On admission he was feverish, drowsy, and badly nourished. There were no spots or abdominal distension. The spleen was easily felt. A leucopenia of 7000 per c.mm. was present, and Widal's reaction, 1 in 20, proved negative at the end of an hour. On October the 1st a few spots were present, and a few days later an intercurrent relapse occurred. Widal's reaction was negative on October the 12th, but the paratyphoid β bacillus was agglutinated with a dilution of 1 in 30 in forty minutes.

The subsequent course was one of steady defervescence. During the attack the temperature ranged between 100° F. and 104° F. for the first six days; it then fell somewhat for two days and was followed by a typical relapse. The maximum pulse rate was 124. Constipation and imperfect digestion of milk were troublesome at first and caused some abdominal distension. Recovery was uncomplicated and quite uneventful.

Case 4.—Female, aged 31 years, had been ailing for four weeks. For three days the temperature varied between 101° F. and 103° F.

Nothing was found to account for her condition, and Widal's reaction was negative. In nine days the temperature came down to normal, and then she had a typical relapse lasting for eighteen days. Constipation was present throughout. A small amount of blood was found in her stools for five days after admission to hospital. The spleen was never palpable, and there was no abdominal distension. The pulse rate kept round about 100 per minute. Spots were present during the relapse. Nutrition remained good and the patient never seemed ill.

Case 5.—A lady, aged about 55 years, was seen in consultation for fever of indefinite origin of three weeks' duration, and for one week hectic in type. She had been more or less ailing for two weeks previously. There were no spots, no abdominal distension, no diarrhœa, and no special symptoms. The spleen was enlarged. A diagnosis of paratyphoid fever was made. The fever subsided gradually in another fortnight and there were no complications.

A consideration of the above few cases indicates the chief features of the disease, viz. a mild course, very like that of typhoid fever, but without the serious complications and in my experience with very much less wasting than is usually seen in typhoid fever.

General description.—The disease is almost certainly not rare. Probably 5 per cent. of cases diagnosed as typhoid fever, on clinical grounds, are really due to paratyphoid infection. Its geographical distribution is widespread. Cases have been recorded in Great Britain, America, Germany, France, Holland, Philippines, Cuba, etc. It may occur in sporadic, endemic, or epidemic form. Van Ingen and Frissell reported a house epidemic of 8 cases; Hünermann described an epidemic of 38 cases; Feyfer and Kayser one of 14 cases. Isolated cases may be found in the course of typhoid fever epidemics. Sometimes there is a mixed infection of the typhoid and paratyphoid organisms. Thus in a fatal case (Berg and Libman) the paracolon bacillus was recovered during life from the gall-bladder, blood, and urine, and healing ulcers were found in the ileum post mortem. The paracolon bacillus was agglutinated in a dilution of 1 in 50; the typhoid bacillus in a dilution of 1 in 250. Other cases of mixed infection have already been referred to.

Age.—Most commonly the cases have been found in young adults, but the disease may occur at any period of life, *e.g.* 4 months to 60 years. Both age and seasonal incidence are practically the same as those of typhoid fever.

Onset.—Sometimes the attack is ushered in by vomiting and abdominal pains, rarely by an initial chill. More often there are noted anorexia, headache, pain in the back and limbs, and irregular fever.

Symptoms.—The tongue is more or less furred, and there are the usual signs of general malaise. Occasionally there is labial herpes. Constipation is more common than diarrhœa. In Feyfer and Kayser's cases diarrhœa was almost always present, the stools being thin, yellowish, and offensive. Abdominal tenderness is uncommon, and distension only occurs as a result of unsuitable food.

Rose spots are present in about half the cases. The spleen is generally enlarged, as demonstrated by percussion, but can only be felt in about 50 per cent.

Bronchitis is common. Epistaxis, vomiting, and albuminuria are sometimes present. Urine may contain indican and give the diazo-reaction. The pulse varies with the temperature; it is generally about 90 to 100 per minute, sometimes dicrotic, sometimes slow and irregular.

The course of the fever is very much like that of typhoid, but perhaps rather more intermittent and more liable to terminate by crisis. Relapses are not uncommon. In rare instances there is no fever.

In my experience there is less anæmia than in typhoid fever and less wasting. The blood shows no leucocytosis. The mental condition generally is clear, and there is no delirium except in very severe cases. Occasionally there are somnolence and apathy.

Complications and sequelæ.—Intestinal hæmorrhage occurs in about 5 per cent. It is rarely severe and is sometimes due to a mixed infection. A study of the morbid anatomy shows that it may occur apart from the typical intestinal lesions of typhoid fever. So far I am unaware of any instance of perforation. A large variety of complications and sequelæ have been noted, viz. bronchopneumonia, pleurisy, endocarditis, femoral phlebitis, meningitis, peritonitis, furunculosis, myositis, cystitis, pyelonephritis, orchitis, cholecystitis, cholelithiasis, osteomyelitis, suppurative arthritis.

Course and prognosis.—The course is that of mild typhoid fever. Six fatal cases are on record, so it is evident that the attack may be severe. Relapses are as frequent as in typhoid fever, but on the whole the course is more favourable. The usual duration is three to five weeks, but it may be as short as ten days or prolonged for nine weeks.

Treatment should be carried out in the same manner as for typhoid fever, but the diet may be more liberal and increased more rapidly after defervescence.

Diagnosis depends on the course of the illness, the serum reactions, and bacteriological examination. The main difficulty is the differential diagnosis between typhoid and paratyphoid fever, and the sub-varieties of the latter.

That typhoid fever can occur without intestinal lesions is probably true. Some of the cases reported have been scientifically proved, but the majority are defective.

Whenever a case of supposed typhoid fever fails to give the Widal reaction, the agglutination test must be tried with the allied organisms. In applying the test, it must be remembered that the paratyphoid bacilli usually require ten to thirty times more serum than do the typhoid bacilli for their agglutination. Hence the saturation test may be necessary, and ignorance of this may lead to erroneous diagnosis. It is advisable also that the test should be tried with several different strains of the paratyphoid organisms.

It may be possible to cultivate the bacillus from the blood, urine, fæces, and even the vagina. Post mortem it may be recovered from other situations as well, especially the spleen and mesenteric glands.

The association of bacilluria and pus cells in Case 1 is of interest and importance. It indicates that these cases must be diagnosed from those of so-called acute pyelitis in infants, a somewhat uncommon disease. One of Acharde and Bensaude's original cases had cystitis or pyelonephritis. Albuminuria has been noted in several cases. Further, the bacillus has been recovered from the urine. Thus, it is clear that the urinary system may be involved in the course of the disease, and the suspicion arises that perhaps some of the cases of acute pyelitis in infants are really cases of paratyphoid fever.

The other affections which have to be diagnosed from this are the various forms of ileo-colitis, with fever, and the abdominal type of influenza.

Cultural differences.—The paratyphoid β bacillus causes a primary acidity and a terminal alkalinity in milk. It does not coagulate milk. It does not produce indol in broth cultures. It causes no fermentation of lactose, but it ferments glucose, with production of gas. The typhoid bacillus possesses similar properties, but does not produce a terminal alkalinity in milk, and does not cause fermentation of glucose. Morphologically, both organisms are motile, multiflagellate, non-spore-bearing bacilli, unstained by Gram's method.

Morbid anatomy.—The anatomical changes are those of a general blood infection. Usually the spleen is enlarged, and presents the same macroscopic and microscopic changes as in typhoid fever. In Van Ingen's fatal case the spleen was not enlarged. The mesenteric glands are practically unaltered, but were reported enlarged in Strong's case. Cloudy swelling of the liver and kidneys and patches of focal necrosis in the liver were found in Longcope's and in Wills and Scott's cases. Focal necrosis of this character may result from many forms of bacterial or chemical intoxication. No intestinal changes were found in Strong's and Longcope's cases, both of which were due to the paratyphoid β organism. In Berg and Libman's case, probably a mixed infection, healing ulcers were found. In Van Ingen's case there were several ulcers, just above the ileo-cæcal valve. They presented a "deep, punched-out appearance, extending in some cases to the peritoneal coat." Peyer's patches appeared normal. There was much intestinal hæmorrhage. In Wills and Scott's case extensive, quite superficial, ragged ulceration, without infiltration, was found a short distance above the ileo-cæcal valve. A pure growth of apparently paratyphoid a was obtained from the spleen and kidneys.

Thus, the main anatomical difference is the absence of the typical typhoidal ulceration of Peyer's patches. The disease is a general blood infection, with wide distribution of the bacilli in the blood and body generally, and absence of localising symptoms.

BIBLIOGRAPHY.

1. ACHARDE AND BENSAUDE.—'Bull. et Mém. de la Soc. de Méd. des Hôpitaux,' vol. xiii, November 27th, 1896, p. 820.
2. H. W. ALLEN.—'Amer. Journ. Med. Sci.,' 1903, vol. cxxv, p. 96.
3. BERG AND LIBMAN.—'Boston Med. and Surg. Journ.,' 1902, vol. cxlvi, p. 443.
4. BRION AND KAYSER.—'Münch. med. Woch.,' 1902, No. 15, p. 611.
5. BUXTON AND COLEMAN.—'Amer. Journ. Med. Sci.,' 1902, vol. cxxiii, p. 976.
6. W. COLEMAN.—'Amer. Med.,' September and October, 1902.
7. CRAIG AND WHITE.—'Dublin Journ. Med. Sci.,' October, 1902.
8. CUSHING.—'Johns Hopkins Hosp. Bulletin,' 1900, vol. xi, p. 156.
9. DANFORTH.—'Med. Century,' New York and Chicago, 1904, vol. xii, p. 201.
10. FEYFER AND KAYSER.—'Münch. med. Woch.,' 1902, vol. xlix, pp. 1692 and 1752.
11. GILBERT.—'La Semaine Médicale,' 1895, p. 1.
12. GWYN.—'Johns Hopkins Hosp. Bulletin,' 1898, vol. ix, p. 54.
13. HEWLETT.—'Amer. Journ. Med. Sci.,' 1902, vol. cxxiv, p. 200; and 'Practitioner,' London, 1904, vol. lxxii, p. 173.
14. HUME.—'Thompson-Yates Laboratories,' 1902, vol. iv, p. 385.
15. HÜNERMAN.—'Zeit. f. Hygiene,' 1902, vol. xl, p. 522.
16. W. B. JOHNSTON.—'Amer. Journ. Med. Sci.,' 1902, vol. cxxiv, p. 187.
17. JOCHMANN.—'Cent. f. Bakt.,' 1903, vol. xxxiii, p. 8.
18. H. KAYSER.—'Deutsch. med. Woch.,' April 23rd, 1903.
19. KURTH.—'Deutsch. med. Woch.,' 1901, vol. xxvii, pp. 501 and 519.
20. W. T. LONGCOPE.—'Amer. Journ. Med. Sci.,' 1902, vol. cxxiv, p. 209.

21. Luksch.—'Cent. f. Bakt.,' 1903, vol. xxxiv, p. 113.

22. Mallory.—'Journ. Exper. Med.,' 1898, vol. iii, p. 611.

23. Opie.—'Johns Hopkins Hosp. Bull.,' 1901, vol. xii, p. 198.

24. Parsons.—'Brit. Med. Journ.,' 1905, I, p. 305.

25. Pascual.—'Brooklyn Med. Journ.,' 1904, vol. xviii, p. 142.

26. J. H. Pratt.—'Boston Med. and Surg. Journ.,' February 5th, 1903, vol. cxlviii, p. 137.

27. Schottmüller.—'Deutsch. med. Woch.,' 1900, vol. xxvi, No. 32, p. 511; and 'Zeit. f. Hyg. u. Infek., 1901, vol. xxxvi, p. 368.

28. Strong.—'Johns Hopkins Hosp. Bull.,' 1902, vol. xiii, p. 107.

29. Tuttle.—'Proc. New York Path. Soc.,' 1903-4, vol. iii, p. 185.

30. Van Ingen and Frissell.—'Med. and Surg. Reports,' Presbyterian Hosp., New York, 1904, vol. vi, p. 257.

31. Von Sion and von Nigel.—'Cent. f. Bakt.,' 1902, vol. xxxii, pp. 482, 581.

32. Widal and Nobécourt.—'La Sémaine Médicale,' 1897, vol. xvii, p. 285.

33. Wills and Scott.—'Journ. Infec. Dis.,' Chicago, 1904, vol. i, p. 72.

AN INTRODUCTION TO RESPIRATORY PEDIATRICS, OR THE CLINICAL CARE OF RESPIRATION IN INFANCY AND CHILDHOOD.*

Two Lectures delivered at St. George's Hospital.

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Lecture II.—The Respiratory Functions in some forms of Disease.

The peculiarities of the normal respiratory function in infancy and children are of practical interest because they furnish the basis, and some explanation, for the further peculiarities to be witnessed in disease. The more striking among them may be briefly tabulated in groups.

(1) Anatomical features:

Thorax relatively small;
Abdomen relatively large (liver, etc.);
Mediastinum relatively large (thymus, etc.).

Ribs raised ("cylindrical chest");
Diaphragm rather high.

Lungs relatively small;
Air-passages narrow.

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* Erratum—In Lecture I, p. 160, third line: For "expiration" read "respiration."

(2) Functional features:

Feebleness of respiratory forces;
Feebleness of resistance of the framework;
Pliability with frailness in all structures;
Mobility with adaptability in all parts.

Command of thoracic, spinal, abdominal, and mixed types of respiration;
Versatility in their combinations;
Tendency to predominance of abdominal breathing;
Hyperpnœa almost exclusively abdominal.

Variations in rhythm extreme;
Tachypnœa more readily set up than hyperpnœa.

Typical rapidity of the inspiratory act;
Expiratory act also short, but very variable in duration;
Extraordinary variability of duration of the respiratory pause.

We may now pass to the consideration of some of the abnormalities of infantile and puerile respiration; and in dealing with them it will be convenient to follow as much as possible the same distinction between "their structural" and "their functional aspects," although during life these can have no separate existence.

Abnormalities of the Thorax.

Congenital malformations and the affections of the spine need not detain us. We are specially concerned with much more prevalent conditions—the familiar chest deformities brought about by asthenia, rickets, emphysema and bronchitis, and pleurisy, which would claim our attention even if their evils were limited to mere disfigurement; but respiratory efficiency is at stake quite as much as beauty of outline. Let us, then, endeavour to realise their mode of production. The barrel-shaped deformity of emphysema and the flattened chest of pleurisy require no elucidation, but we must briefly dwell upon the mechanism of those unhappy productions known as "Pigeon-breast" and "Harrison's deformity."

The Mechanism of Production of "Pigeon-breast" and of Harrison's Deformity.

Pigeon-breast.—Three factors are concerned in the mechanical production of pigeon-breast, as well as of Harrison's deformity: the lungs, the muscles, and the skeleton.

The lungs are probably more or less at fault, at any rate at the beginning. There may be, in the worst instances, serious bronchial obstruction from catarrh: it is quite enough, however, in the majority of cases, that there should be a retardation in the inspiratory penetration of air into the alveoli.

In the adult, the inspiratory force is applied gradually and slowly. Its suctional effect within the relatively rigid thorax is sustained for an appreciable time, and succeeds in reaching the deeper and less responsive parts of the lung. But in the infant no such opportunity is afforded for a distribution of the suctional force. The inspiratory act is so short, and often abrupt, that any part of the lung which fails to undergo immediate expansion is not given a second chance.

The muscles play an important part, which will be best understood by contrasting the effect of asthenia pure and simple occurring apart from any rickety affection of the bones. In this state muscular energy falls short of its work; each successive inspiratory act is less effectual than the previous one, and finally aëration of the lung is reduced to a fatal minimum. In this terminal result the diaphragm is concerned, as well as the muscles of the thoracic expansion.

The peculiarity in rickets is the absence at first of this essential myasthenia, and the continued preservation of the inspiratory activity of the diaphragm. The diaphragm never completely loses its fulcrum, because, owing to the considerable encroachment of the enlarged abdominal viscera into the base of the thorax, the lower costal arches are fully supported as well as widely expanded.

The intercostal muscles lack this mechanical advantage. The work of their short fibres is dependent upon rigidity of the ribs and a perfect preservation of their normal spacing. The slightest disturbance of the latter, such as may occur quite early in the rachitic affection, interferes with the mechanism. With advancing disease, even if they should continue to contract at each inspiration, the muscles become less and less efficient. In this way the softening of the thorax paralyses the intercostals. Practically, the diaphragm is left to do the whole work of inspiration. Doubtless it could do it successfully if it were afforded a fair opportunity. But the suctional force which it exercises at the base needs to be propagated through the lung from the base to the apex, and for its perfect transmission there is neither time nor enough thoracic rigidity.

The bony and cartilaginous framework are thus primarily at fault, the muscles only secondarily. The original trouble is the yielding of the ribs at their point of greatest strain, namely, at the end of the long lever which each of them represents, in the lower axillary region where normally the greatest costal excursion takes place. This is the seat of the most active expansion of the lung, with the exception of their diaphragmatic surface; and it is there that rachitis exerts its paralysing effect. This is well displayed in the early and mild cases, where there is merely a slight depression of vertical grooving of the anterior thoracic surface between the mammary and the anterior axillary lines. But it may be more profitable to consider the changes resulting in extreme cases. I have, therefore, placed side by side for comparative study diagrams of the extreme form of pigeon-breast and of the condition described in my first lecture as resulting from acute stenosis of the upper respiratory tract, as in attacks of laryngeal or tracheal obstruction in children quite free from rickets.

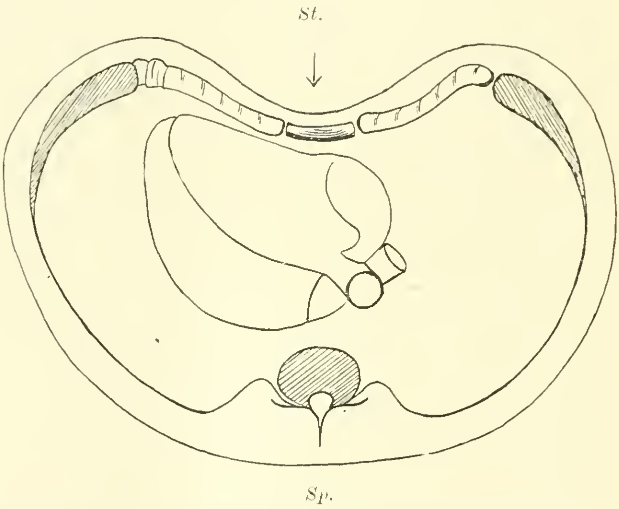


Fig. 1.—Diagram of horizontal section through non-rachitic thorax in the inspiratory struggle of tracheal obstruction. The heart is driven towards the left.

Fig. 1 shows in transverse section the condition of the chest at the height of the inspiratory struggle. The chest has not expanded perceptibly. On the contrary, its antero-posterior diameter is much diminished by the recession of the sternum and costal cartilages; but all its inspiratory muscles, and particularly the diaphragm, are at work in a vain endeavour to draw in air. The result is merely a dragging in of the soft tissues of the epigastrium and of the yielding cartilages of the ribs. As the lower chondrocostal arches are points of insertion for the muscular fibres of the diaphragm, it is possible that the direct traction of the latter may be partly responsible for the recession of the cartilages and of the sternum.

In this deformity the heart does not descend, because the central tendon is held up; but its position becomes more transverse and inclined towards the left, by reason of the diminished space between sternum and spine. These are the results which arise in a healthy child from strong general intra-thoracic suction by the joint action of all the inspiratory muscles, but particularly of the diaphragm. The latter works upon the more yielding base of the thorax like the piston of a vacuum syringe, and the suction which it sets up, failing to expand the lung, is transmitted to the thoracic parietes. These are everywhere slightly retracted, but only the cartilages suffer in a marked degree. Direct muscular in-dragging of the bony ribs themselves by the diaphragm is not a pronounced feature; although this may be a contributory factor in the extreme recession of the cartilages of the epigastric and sternal regions.

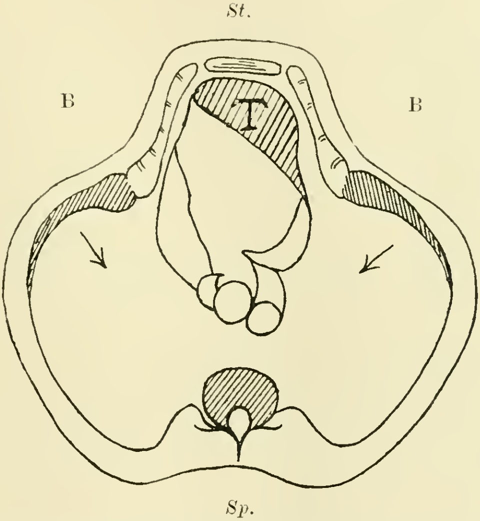


Fig. 2.—Diagram of section through a "pigeon-breast" of extreme type. The thymus (the lower end of which is shown diagramatically) and the heart occupy the retro-sternal region from which the lungs have receded.

Fig. 2 represents a high degree of pigeon-breast, and shows how the ribs give way at the point B of greatest strain and of least support—viz. close to their beaded and softened extremity. The extreme contraction depicted is witnessed as a result of superadded acute obstruction in the upper respiratory tract, most commonly from laryngismus, the pre-existing slighter degree of deformity having gradually set in from some trivial interference with pulmonary expansion.

Once the slightest bending-in has occurred at B, the underlying lung becomes less and less capable of re-expansion. The condition may remain stationary; but if severe respiratory obstruction of any kind should occur, the progressive development of the "pigeon-breast" is an inevitable fulfilment.

As cartilage also is affected in rickets, it is not surprising that the arch should yield at B, where both the cartilage and the bone are at their softest. It may appear strange that the bony part of the rib should yield in its length to atmospheric pressure (in the direction shown by the arrows), instead of the soft cartilage yielding as in the deformity first described. This seems to be the result of the difference in their relative support. I may point out that the mediastinal structures are much more solid than the intra-pleural; and that with the small chest diameter of puny infants the space between spine and sternum is well filled, particularly when the thymus is large, and that in consequence the sternum is supported.

The effect of the falling-in of the ribs, and of the deepening of the vertical groove at B, is to lessen the lateral accommodation for the heart, and to mechanically confine it to a median position. The strong support thus afforded to the sternum probably explains the paradox that the cartilaginous chest surface, which in normally strong chests is driven in by atmospheric pressure in tracheal stenosis, should be protruded in rickety chests where the cartilage is still softer.

This brief sketch of the mechanism of production of the lateral grooving would not be complete without mention of the lower thoracic deformity by expansion and eversion of the costal arch. This, the most yielding portion of the thoracic skeleton, is safeguarded against collapse by being stretched over the enlarged liver and over the visceral mass which rises high into the chest and encroaches upon the respiratory space. This rise is in reality the saving clause, the only *modus spirandi*, in advanced collapse of the chest; for it affords a steady fulcrum for the struggling contractions of the diaphragm, and by broadening the diameters across the base of the thorax it provides for a relatively good oxygen supply from the broad base of the lung to make up for its relatively airless state elsewhere.

Harrison's deformity, and the mode of production of Harrison's sulcus.—Among the various views entertained on this subject may perhaps be submitted the following, which I have formed from clinical observation. It is first of all essential to bear in mind that rachitis varies greatly from subject to subject, not only in its severity but as to its incidence in various parts of the body. It does not always attack the entire skeleton. Most commonly it picks out the ends of the long bones, and the costochondral junctions as well; but not always both in the same degree nor in the same subject. In others, again, the softening of the diaphysis of the long bones is much more conspicuous than any other change, and this may be, and generally is, more marked in some bones than in others. Or again, the characteristic changes in the cranial bones may be more in evidence. Any children's out-patient room will furnish you with an assortment of all these varieties which are subdivisions of the two main groups of the "fat" and of the "lean" rickets. It is clear, then, that every case need not present the crumpled **S**-shaped clavicle, or the distorted ribs of pigeon-breast.

In spite of this variety and of the striking fact that rachitis is usually associated with emaciation, although it is not essentially a wasting disease, there is one feature of agreement: the rickety infant or child always has a large belly. In all cases, then, the base of the thorax is abnormally broad. The transition may be a gradual one from the smaller upper chest diameter to the increased lower diameter, as, for instance, in those chests which are naturally rather deep, and if there should be no marked bending of the upper ribs the outline will somewhat resemble the sloping appearance of a cone. But in a small chest just slightly rickety, the occurrence of considerable abdominal distension will occasion a much more abrupt bulging, and will give rise to a transverse furrow across the anterior base of the thorax. This will be found to correspond more or less definitely with the upper level of the liver, and roughly too with the level of the costal and sternal insertions of the midriff.

But there is not merely a sudden change in the diameter. Active retraction occurs along the same line. The mechanism of the retraction is practically the same as that in pigeon-breast, only the bony ribs are *not softened*—and therefore the upper and lateral part of the lungs not collapsed, and inspiration therefore not so ineffectual. Nevertheless, the thorax is "crowded." Many sets of lobules are imperfectly expanded or collapsed, and not all the air tubes are cleared by sufficiently powerful draughts. This is quite enough to cause slight delay in inspiratory inflation, and to allow intra-thoracic suction to occur. We have to reckon in these cases with the same forces: the sudden descent of the high vault of the diaphragm which makes too abrupt a call upon the expansion of the lung, and, in addition, the mechanical effect of its muscular contraction upon the thorax. The powerful descent of the diaphragm acts locally as well as by suction upon the ends of the lower ribs and upon the softened cartilages, and they yield. The furrow deepens; and unless the abdominal distension as well as the rachitis be speedily relieved it will persist through life as a record of both.

In conclusion, we may regard Harrison's deformity as resulting from a combination of mild degrees only of the thoracic skeletal changes of rickets with well-marked abdominal changes. The upper ribs not being softened resist atmospheric pressure; the lower cartilages and the costal arches are the yielding structures; but the abdominal swelling keeps the basic fringe of the thorax everted, and the area of recession is thus reduced to a horizontal groove of varying but limited width.

The Morbid Changes in the Lungs.—Atelectasis and Emphysema.

Time limits us to a consideration of the altered conditions of pulmonary expansion to the exclusion of the bronchial affections. Only a passing allusion can be made to the important subject of dilatation of the bronchioles, secondary to acute infantile disorders, and in particular to the broncho-pneumonia of whooping-cough. This is not an uncommon result, though not comparing in frequency with emphysema and atelectasis, to which we shall now turn our attention.

Both these conditions may occur in a scattered lobular form, and then they are usually combined; but they are also met with in the pure form involving a considerable extent of the lung.

The mechanism of production of emphysema has been so fully discussed in medical literature and explained in your text-books that the details of the inspiratory and of the expiratory theory are superfluous, although they cannot anywhere be better demonstrated than in the infantile lung. Nowhere, too, could it better be shown how both these apparently contradictory processes may contribute to the same result. Have we not the analogy of such opposites as atelectasis and emphysema occurring in contiguous lobules and arising essentially from a common morbid causation?

The infantile lungs and bronchi, such as we have described them, have a special facility for the production both of atelectasis and of emphysema. It is the easiest thing in the world for air to be either locked in or locked out in a system where the forces and the resistances are so finely balanced.

Simple or primary atelectasis.—In the adult atelectasis does not share with emphysema any great prevalence; and it generally arises from such coarse changes as the lateral pressure of fluid or of solid deposits, or the impaction of any form of plug into some bronchial division. The thoracic factor does not take the same place in etiology as in the infant. Atelectasis is the normal condition in the fœtus; and the infantile lung can still relapse into it to an extent quite impossible after the thorax has once become rigid. This accounts for the fact that primary atelectasis is peculiar to infancy, and it also throws light upon its pathology. The starting-point of the whole process is *asthenia,* a condition which of course may occur in an extreme form at any age; but only in the infant can it lead to a pulmonary collapse of sufficient extent to be in itself fatal. In these cases the process is not secondary to any plugging of the air-passages, but secondary only to the asthenia, which is both general and more myasthenic. Small as is the force requisite to elevate the ribs and depress the diaphragm where no obstacle exists, this is more than the enfeebled muscles can command. In the acquired respiratory deformities of the thorax which we have studied it is the overaction of some of the respiratory muscles, especially the diaphragm, that brings about the distortion of bone and cartilage. In simple atelectasis there is no distortion, for it is the inability to struggle for breath that leads to the collapse. We may also conclude from our previous observations that absence of sufficient energy of the diaphragm is the most fatal feature in the process.

The practical importance of this subject is very great, since the causes of asthenia are numerous in infancy, and any of them is competent to bring about the result. Atelectasis is a danger inseparable from most of the severe infantile affections and which must be steadily borne in mind; but its most usual occurrence is in the last stage of marasmus.

Thoracic collapse in relation to pulmonary expansion.—It may facilitate your grasping the mechanism of this fatal form if I refer by contrast to the milder or lobular variety. This is always accompanied by some degree of lobular emphysema; an accumulation of evils which has a redeeming advantage over and above the mere fact of compensation, for it renders impossible the development of the most extreme form of atelectasis by keeping the cubic capacity of the thorax above a dangerous minimum. The emphysematous section of the lung may be inefficient in its respiratory function; but at any rate it occupies space, and it wards off the great danger of collapse of the chest which is a distinct factor in bringing about collapse of the lung.

Let me make my meaning clear on this point. The elasticity of the alveoli on the stretch is a force which never ceases to act until a lung is completely contracted. The inspiratory forces which oppose it vary with the strength of the heart, and this is itself dependent upon adequate supplies of oxygen as well as of food. Obviously, then, in states of muscular prostration, the inspiratory inadequacy will be progressive because of the increasing enfeeblement of the heart. Each successive inspiration, whilst it has an increased task of re-expansion before it, has less energy for its performance. Thus any assistance which may chance to be given to the natural recoil of the elastic tissue, as, for instance, by lateral pressure and in particular by the pressure of decubitus or of tight clothing, will be turned into a permanent loss of pulmonary expansion. I have already briefly alluded to this *local effect upon the lung* of the "postural pressures," local collapse being so readily produced in the infant. I must now specially refer to the more *general* effect due to thoracic collapse in conditions of intense asthenia, for it has a practical bearing of importance. In this state even the slightest forms of thoracic compression must be avoided. We are therefore debarred from the use of mechanically aided expiration, which in the adult is often of much value as a means of eliciting more effective inspirations. As a fact, the ribs in the asthenic infants in question have already subsided into the full expiratory position beyond which they must not be further depressed.

Thoracic collapse in relation to the work of the diaphragm.—You may now be able to appreciate the detrimental significance of the gradual collapse of the ribs which is the usual antecedent of the primary atelectasis witnessed in cases of marasmus. Another point for your consideration, also important, is the question of mechanical advantage in the work of the diaphragm. Imagine a diaphragm so much depressed in its average position as to lie almost flat between its points of insertion; it would be practically useless for the purpose of increasing the capacity of the chest. Or, again, imagine a chest so much reduced at the base in its previously normal diameters that the ample surface of the diaphragm can no longer be made taut. Here, again, there is a great loss of mechanical advantage. It thus appears that in infancy, with its familiar dependence upon the diaphragm for the work of respiration, abdominal collapse would have much to say to the production of collapse of the thorax and, therefore, of the lungs; and that, on the other hand, any influence preserving a sufficient breadth of the base of the thorax, whether this be air in the lungs, as in emphysema, or gases in the intestine, would promote the efficiency of the diaphragm as the chief agent of inspiration. This, then, is the saving clause introduced by the admixture of complementary emphysema by the side of atelectasis, that by keeping the chest moderately full it obviates that utter collapse of the base of the thorax which almost abolishes diaphragmatic breathing through sheer mechanical disadvantage.

Abnormal Types of Breathing.

Alteration in rhythm. The inverted respiratory rhythm of infants. —Among the varied series of changes through which the respiratory rhythm of infants is apt to pass under the visceral or psychical influences incidental to health, or under the stress of disease, there is at least one definite type which by its frequency and persistence, as well as by its striking features, deserves to be specially noticed. I propose to describe it to you under the name of "The Inverted Respiratory Rhythm"; and I only regret that leisure should have failed me to take physiological tracings for its graphic demonstration. The chief peculiarities of this type are: (1) the shortness and abruptness of inspiration; (2) the relative lengthening of expiration; and (3) the extreme prolongation of the pause.

The first of these points is the least striking, for we have already dwelt upon rapidity of inspiration as normal in infants. The increased duration of expiration is, on the other hand, often very remarkable. It is much emphasised in the act of crying, which sometimes seems almost interminable.

More remarkable still is the duration of the respiratory pause or "held breath of infants," so familiar to auscultators who have to watch patiently for the inspiration, which seems as though it would never come, and which, when it does come, is over like lightning. All this is entirely different from the quiet style of breathing and the well-balanced proportion between the respiratory phases as observed during sleep.

The mechanism seems to be entirely upset by any strain or by any emotion, and the mere application of the stethoscope may introduce the factor of held breath. The accompanying diagrams convey some idea of the extent of the alteration.

The normal sequence in infants is represented by a short inspiratory act, a moderately long expiratory act, and a short pause. This phrasing is altogether changed in the other style. As we watch the breathing with the stethoscope, the first thing we hear is expiration. This is quickly followed by the loud, spasmodic jerk of inspiration; and then occurs a prolonged silence which we may not care to time to its end. The period which we have heard would read thus: (1) Expiration, (2) inspiration, (3) pause. All listeners would probably agree that the period does not begin fairly with inspiration but with expiration, and that the pause is displaced from its usual position.

The mechanism of this alteration needs further elucidation. Held breath in the position of inspiration is familiar to us in two kinds of modified respiration—the emotional forms, as in gasping from fright, and in sobbing; and the purposive form observed in muscular effort or strain. Both varieties are common in infancy. But we need not dwell upon the emotional forms, which are not necessarily connected with any morbid condition, and the frequency of which probably results from the predisposing effect of the visceral factors to which I will now refer.

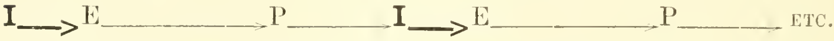


Fig. 3.—Normal Rhythm: (1) Inspiration, (2) Expiration, (3) Pause.

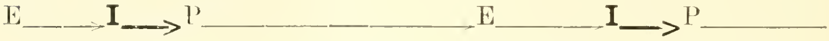


Fig. 4.—Inverted Rhythm: (1) Expiration, (2) Inspiration, (3) Pause.

Whilst voluntary muscular effort is almost excluded at that age, abdominal straining is a recognised function in infancy. It becomes a specially prominent function in infants with distended abdomens. And among the latter we may distinguish two classes according as the urgency is respiratory or abdominal.

In an asthenic infant with excessive abdominal encroachment into the chest the urgency is probably respiratory.

The diaphragm is stimulated to a powerful effort and descends abruptly from its high level. But it does not ascend again immediately as in the normal type. The fresh supply of air has been hard earned and is not readily to be parted with; and the temporary closure of the glottis, whilst it temporarily relieves the diaphragm of any further struggle, serves in this instance the purpose of aeration of the blood.

In the other still larger section the difficulty is not merely enlargement, but irritative encumbrance of the abdomen. Systematic effort is set up for the relief of this encumbrance which too often no mere straining can remove. Commonly it is not the contents of the lower bowel which excite the respiratory centre, but the fermenting contents of the small intestine or of the stomach itself. These cases may often be identified, not only by their aspect, which is sufficiently distinctive, but by the explosive, noisy, or even grunting character of the expiration.

This brief sketch of the mechanism of the inverted respiratory rhythm has been drawn chiefly from its abdominal presentments. The abnormality is by no means, however, limited in its occurrence to abdominal conditions. It is also witnessed where the affection may be entirely thoracic without any obvious complication below the diaphragm. It is then mainly an expression along familiar lines of the infant's dyspnœa, which, as previously stated, is not afforded the mechanical relief sought by the adult in orthopnœa. It is also a provision for the longer contact of the inspired air with a pulmonary surface more or less curtailed by disease.

Emprosthopnœa or the "Inverted" Respiratory Posture, or "Posture of Adoration."

When I said that orthopnœa did not belong to infancy, I did not mean to include in that group early childhood. Orthopnœa does occur even in young children; its presence or absence in the dyspnœa of the young seems to be largely a question of "backbone," *i. e.* of spinal adequacy, and of sufficient consciousness to turn it to account.

On the other hand, the curious type of breathing which I will now describe does not, so far as I have observed, occur in earliest infancy. But it may be seen in its later stages, as well as in its very early childhood, when, although the individual automatism has already come into play, the spine is not yet sufficiently strong to serve the purpose of true orthopnœa. It is also seen in slightly later childhood, particularly in severe cases of cardiac or pericardial disease with enlargement.

In its full development it is a substitute for orthopnœa. Inasmuch as due regard for the meaning of that word precludes its being applied to any posture except the upright, I am led to suggest for this type the term *Emprosthopnœa.* This term we may feel ourselves quite as much entitled to use as the other clinical term, *Emprosthotonos.* But I can offer you a plain English alternative for it—"Inverted Respiratory Posture." The attitude in question in its extreme form may be described as the "Head and Knee Position." I have not any dyspnœic patient exhibiting it at present, but through the kindness of my colleague, Sir William Bennett, I am able to give you an illustration of an analogous posture in the case of a lusty boy, aged 14 months, recently admitted for a burn of the hand and cheek. Most often during his day sleeps he is found in a most awkward position—flat upon his face and yet seated, his trunk acutely flexed at the hips and lying between his legs. Apparently, when dozing he has failed to preserve the sitting posture, of which he is already capable, and instead of dropping back he has inclined and dropped forwards.

Now, what is the effect of this strange posture in this baby, in whom it is purely accidental, for, on examining the infant, we find that there is in him no obvious disease, deformity, or weakness, and in the rather older patients which I have specially in mind, in whom it is of pathological origin? The effect, in this partial degree of emprosthopnœa, as well as in its full development, is to liberate the inspiratory play of the posterior half of the thorax and of the posterior lobes of the lungs. This is the mechanical principle of the "Head and Knee Respiration." When, in the future, you may chance to see a case of this kind, you will readily perceive that it is one of inverted orthopnœa. To sit up the dyspnœic child may not have the strength, much less to stand; neither can he kneel up during his sleep, but he can kneel in the bent posture, or "*posture of adoration.*" He can thus relieve the weary spine of the weight of the head, this being, as you are aware, proportionately greater in children than adults. For in this position the vertex rests upon the bed, and the spine and chest are dependent instead of upright.

But most often it is not a question of head so much as a question of heart and of lungs, whilst it does still remain always a question of gravity. There is a "lung-purpose" and a "heart-purpose" in this extraordinary attitude. The respiratory advantage secured is manifest—it includes the free aëration of the posterior lobes mentioned above, and at the same time full mechanical advantage is obtained for most of the fulcra, which subserve ordinary orthopnœa. You will perceive that the spine steadied upon the bed by the vertex becomes an efficient basis for the action of the thoracic and also of some of the dorso- and pelvi-thoracic muscles. The spine itself can take a part in the thoracic expansion. Moreover the "external fulcra" which are denied to infants are available in this position owing to the supported attitude of the elbow and shoulder. And lastly, an additional advantage, as we shall see, is also secured for the diaphragm.

As a fact, emprosthopnœa is most commonly resorted to for the relief of the intense distress of cardiac dyspnœa. The "heart-purpose" is carried out pre-eminently by gravitation. The great object is to ease the diaphragm of its cardiac load by throwing the weight upon the sternum. Most important, too, is the rest afforded to the anterior muscles of thoracic inspiration, and the reduction of the over-distension of the upper lobes arising from continued orthopnœa. The release of the left lower lobe from cardiac pressure is another great gain. And lastly, not the least advantage is that derived from an altered level of the diaphragm. This was previously depressed by the enormous weight of the heart or pericardium. By being able to rise it once more becomes efficient in inspiration. Associated with this gain there remains to be mentioned the great relief afforded to the structures at the root of the lung, which, in continued orthopnœa with progressive lowering and atony of the diaphragm, are apt to be dragged by the weight of the heart.

In view of the direct relief thus offered to the cardio-respiratory distress it is not surprising that this strange attitude should be resorted to as the only one really helpful, and that it should then be the only one in which sleep is possible.

One of the practical hints which are contained in these observations is that we should warn our nurses not to interfere too diligently with the awkward but obviously beneficial postures sometimes selected by our little patients. There are other lessons, upon which we cannot afford to dwell to-day.

Concluding Remarks.

In conclusion, the excuse for the fragmentary nature of these lectures must be that their purpose was merely introductory in connection with a few selected observations, intended to stimulate inquiry, to point some practical lesson, or to suggest some fresh line of clinical work. If they have succeeded in this they will not have been entirely in vain.

Time has not permitted me to approach the therapeutical developments, which I must defer to some future opportunity. A great part of this practical section of the subject is still in a stage of evolution; but I might have demonstrated to you in infants and children some of the methods which I have practised and published in connection with adults, and particularly those which aim at remedying excessive or deficient pulmonary expansion. These are the most important and frequent requirements, and it is in these directions that our efforts will prove the most fruitful in results.

My remarks have touched but very lightly upon the subject of emphysema; it might have taken us too far, but there is more finality about atelectasis. A lobule cannot be more than absolutely airless; and when its collapse is not due to some congenital cause it can be reinflated with remarkable facility. The developments of emphysema present less simplicity. Although we sometimes may recognise a definite hereditary proclivity or some other pre-disposing agency, emphysema can never be congenital, neither can it become established with suddenness or rapidity. Therefore, the more advanced forms, such as bullar emphysema, are practically unknown; almost the only instances of the latter belonging to the interstitial or interlobular variety, so often witnessed formerly when tracheotomy was more frequently required. It follows then that in the emphysema of infancy and early childhood you will have to deal with the first beginnings of a slowly progressive disease at an age when the forces of nature are not only constructive, but also within wide limits reconstructive. Not to neglect the therapeutic opportunity which they offer should be your earnest endeavour, and any persevering efforts which you may make in that direction cannot fail to be amply rewarded by success.

A CASE OF ACUTE INTESTINAL OBSTRUCTION IN AN INFANT DUE TO STRANGULATION UNDER A BAND.

By L. A. Parry, B.S., F.R.C.S.,
Assistant Surgeon Royal Alexandra Hospital for Sick Children, Brighton.

A perfectly healthy male infant, aged 17 months, with no history of any previous illness, was on December the 12th suddenly seized with intense abdominal pain. He cried off and on the whole day. The same evening a doctor was sent for, and he ordered a dose of castor oil. The bowels had been opened the previous day. No action followed this, but the child was quieter. On the next day the doctor sent a powder and ordered an enema. There was a slight result from this, some hard matter, but no blood or mucus. Sickness commenced on this day, but was not very frequent. On the 14th, the child being still in pain, more oil was given and hot fomentations were applied to the abdomen. On the 15th another enema was ordered, which brought away a little hard fæcal matter. No flatus was passed all this time. On the 16th another powder was administered, with no result, and on the next day, the 17th, the child, being very bad, was sent to the hospital at 10.30 a.m. Briefly the history then was five days of absolute constipation, with abdominal pain and vomiting, the last not fæcal, and never very marked. I saw him soon after admission. The abdomen was uniformly distended, but not excessively so. No tumour could be felt, but an indefinite sense of resistance was present in the right flank. The patient had the abdominal facies, his pulse-rate was rapid and thready, he had not vomited since coming to the hospital. He was obviously very ill, and if anything was to be done it must be done at once. He was immediately put on the table I made a median incision below the umbilicus, some blood-stained fluid escaped, and almost at once a knuckle of quite black intestine presented. It was found that a coil of small intestine, about 10 inches long, had slipped under a band, which was about the thickness of strong whipcord, and attached at its two extremities to the centre of the back of the abdominal wall in the right side, the two points of attachment being about 1 inch apart, leaving a space into which the tip of the finger could just be introduced. The loop which had slipped through was tightly nipped, but only 4 inches in the centre was gangrenous—3 inches of congested but still fairly healthy intestine being on either side of it. The gangrenous portion was quite dead, being absolutely black. What must have happened is this—the gangrenous piece had been the first loop strangulated, and later, as the result of repeated doses of oil, etc., more intestine must have been forced down, which had not yet got to the stage of gangrene. The appendix was quite healthy, Meckel's diverticulum came off below the loop, was 6 inches long, and was perfectly free and healthy. The involved intestine terminated 2 inches above the ileo-cæcal valve.

I resected the gangrenous intestine with a healthy margin on each side, altogether 7 inches, and put in a Murphy's button. The child bore the operation fairly well, but died about four hours later. I do not think there is any recorded case of an infant under 2 years of age recovering after intestinal resection.

The points of interest to my mind in this case are as follows: (1) The persistent administration of aperients in the presence of typical symptoms of acute obstruction is to me inexplicable. (2) Strangulation under a band is a very rare cause of intestinal obstruction in an infant. Much the most common cause at this age is intussusception, and I was quite prepared to find this in spite of the absence of typical symptoms, *e. g.* the presence of a tumour and the passage of blood and mucus. Gangrene of intestine, too, is rare, even when there is strangulation under a band, the constriction not being usually sufficiently tight. (3) The origin of the band is extremely interesting—there was no history of any previous peritonitis, it was not connected with the appendix, Meckel's diverticulum, or apparently any viscus—so I imagine it was probably congenital. (4) Is there any better method of treatment, any which holds out any hope of success? With the bowel actually gangrenous, only two procedures are possible, firstly, excision, with an end-to-end anastomosis, the procedure adopted by me; secondly, excision, followed by the establishment of an artificial anus. Both of these measures are exceedingly severe in a young child, and the prognosis in either case is very unfavourable.

The Society for the Study of Disease in Children.

A MEETING of this Society was held on May the 5th, 1905, at No. 11, Chandos Street, W., Dr. GEORGE CARPENTER being in the chair.

A Girl, with Silver Deposit on the Cornea, aged 4 years, was shown by Mr. SYDNEY STEPHENSON. Due to the application of solid nitrate of silver to an ulcer.

Cases of Combined Aortic and Mitral Disease in five children were shown by Dr. J. F. POYNTON. In one with a double mitral murmur a previously well-marked aortic diastolic murmur had completely disappeared. In another the aortic murmur had almost disappeared.

Dr. THEODORE FISHER (Bristol) said that it was his opinion that harsh murmurs ascribed to aortic disease were sometimes due to other causes.

A Boy with Generalised Alopecia, aged 8 years, was shown by Mr. GEORGE PERNET.

Mr. ERNEST CLARKE said that he knew of a case in which high-frequency currents had proved beneficial.

A Child with Bilateral Coloboma of the Iris, in the down and out instead of the usually directed downward position, was shown by Mr. CLARKE. There was no notch in the lens or the lids. Nystagmus was present, probably due to a very thin choroid and great refractive defect. He attributed the condition to intra-uterine inflammation rather than to arrested development in the closure of the fissure.

A Child, with Bilateral Periostitis of the Femur, aged 12 months, was shown by Dr. Edmund Cautley. The child had been brought up on a diet conducive to scurvy. She came under notice at 10 months of age for swelling of the right knee and thigh of one month's duration and a similar condition of the left side for two weeks. She was anæmic, rachitic, wasted, feverish, and had two teeth, but there was no discoloration of the gums. Much swelling, pain, and tenderness were present. The right side diminished, but at first the left leg became worse. An exploratory incision above the knee yielded no pus. The temperature subsided in a few days and recovery was steady and uneventful; the child gained 26 ounces in weight in four weeks. There was still considerable thickening of the lower half of each femur. He regarded the case as syphilitic on account of the symmetry, the course, the result of the exploratory incision, and the absence of signs of scurvy. There was almost certainly some epiphysitis as well. The mother had had one miscarriage,

A Case of Wasting of the Left Leg and Right Hand and Forearm in a girl, aged 11 years, was shown by Dr. F. Parkes Weber. The wasting began insidiously a year ago. Sensation and electrical response were deficient in the affected parts and there was reaction of degeneration in the muscles of the thenar eminence. He regarded the condition as a dystrophy of the peroneal type. There was no family history of the disease.

Dr. Cautley agreed that it was a form of peroneal atrophy and also drew attention to the "claw-like" condition of the hand, the wasting of the vastus internus, and the presence of pes cavus. Three years ago he had exhibited a case before the Society which had begun at the exceptionally early age of 18 months. As in the case of Dr. Weber's patient, there was no family history, but the child had had measles. He thought that the sporadic cases were perhaps different in their pathology from the hereditary ones, and often secondary to specific fevers.

Cases of Congenital Deformity of the Hands in several members of the same family were shown by Dr. George Carpenter. The deformities chiefly comprised absence of the nails and the terminal phalanges of the little fingers. Two children, their mother, an aunt, an uncle, and some of his children were affected. The mother's father had two thumbs on each hand and his brother had webbed fingers.

A Specimen of Congenital Hypertrophic Stenosis of the Pylorus treated by Pyloroplasty was shown by Dr. Carpenter and Mr. J. P. Lockhart Mummery. The patient, who was an infant, aged 3 months, died on the morning following the operation.

A Specimen of Multiple Papillomata of the Larynx from a boy, aged 4 years, was shown by Dr. L. W. Marshall (Nottingham).

Cases of Multiple Gummata in a girl, aged 7 years, and **Bilateral Birth Palsy of the Arms** in an infant, aged 4 months, were shown by Dr. J. Porter Parkinson.

A Case of Primary Tuberculous Disease of the Middle Ear, with Secondary Involvement of the Cervical Glands, was shown by Mr. Hunter F. Tod.

Editorial.

INFANT SCHOOLS AS BAD HEALTH FACTORIES.

Are infant schools beneficial or prejudicial to the well-being of the community? The poorer members of the kingdom are under existing conditions encouraged to send their infants under 5 years of age to school to get them out of the way temporarily, the school being used by them as a *crèche;* and the teachers, by reason of the Education Act and the Government grant paid for their attendance, attempt to make mental impressions on these poor little mites under most unwholesome conditions. A writer in the 'Nineteenth Century,' an ex-inspector under the Board of Education, very aptly says that what these children need is nurses rather than teachers. He states that in the long summer afternoons things are at their worst. Baby after baby, overcome by sleep in the heated atmosphere, falls forward off his seat, banging his forehead against the desk in front, and awakes in tears, to find that such misfortunes are too common an occurrence for much comfort to be his portion. "The child is in a close room"—the ex-inspector has no hesitation in saying that not 20 per cent. of the classrooms he saw in Manchester are properly ventilated—"he is bent forward, his back is all crooked, and his body is all sideways." A writer in the 'Manchester Guardian' states that Manchester schools are badly ventilated buildings, and that the well-built modern schools are greater offenders in this respect than the more porous rickety structures of the past. The same thing has been experienced in the case of mills, the well-built modern mill being found on an analysis of the air to be in a much worse state than one of the older class. He affirms that the average school is hundreds per cent. worse in air-sewage than a cotton manufacturer would be brought before a magistrate and fined for. He doubts if in an ordinary modern classroom less than 20 to 30 volumes of carbon dioxide per 100,000 would be found, or from 400 to 600 per cent. more than a manufacturer would be fined for. He had during recent years made thousands of analyses of the atmosphere of schools and mills, and never yet found a school which could possibly be compared with an average mill.

The bad effects on the growing organism of daily inhalations of and semi-asphyxiation by such a poisonous atmosphere cannot be over-estimated. Physical deterioration, tuberculous troubles, acute lung complaints, and epidemic disorders follow in the wake of such an unwholesome condition of affairs. The influence of the herding of infants on outbreaks of measles and other infectious diseases is unquestioned. During the first five years of life measles is a very fatal complaint, and the infant school is responsible for much of this high rate of mortality. Parents readily mistake the early onset of measles for a cold in the head, the infant is packed off to school, and the inevitable happens. Whooping-cough is apt to follow in the train of measles, and both complaints are very prone to pave the way for tuberculosis.

Public schools for infants under existing insanitary conditions are not calculated to promote their physical welfare. If sickness and epidemics are to be banished from their midst, efficient ventilation of the schools will have to be undertaken. Ventilation under power will be necessary to check the evil, for existing methods have been tried and proved to be inadequate. Should proper methods of ventilation fail to control the present high mortality rate, the advisability of closing these schools to infants will have to be seriously considered by the authorities. The discipline of the school and the giving by skilled teachers of suitable lessons, if the infantile environment be made healthy, is preferable to lack of control and faulty surroundings at home, but we are not in favour of any tasks for infants that could not be considered a form of play under supervision.

Excerpta Puerilia.

Infants smothered in bed.—In the year 1901 there were 1538 deaths attributable to this cause in England and Wales, no less than 500 of the cases being in London. In 1903 the figures had risen to 1629 for England and Wales, 600 of the deaths occurring in London. Dr. Waldo, the Coroner for the City of London, said that his experience of these cases was that few were due to the drunken habits of the parents, but rather to the ignorance or carelessness of mothers who did not realise the need of cots. Mr. Coroner S. F. Butcher, when holding an inquest at Ramsbottom, Lancashire, remarked that it was probably owing to affection, that induced parents to have children in bed with them. He had laid down a hard and fast rule which he intended to follow, and that was whenever children died from this cause to order a post-mortem examination. By this means he hoped to put a stop to what he was sure was a mistake. Other coroners might follow Mr. Butcher's example with advantage to the community.

Poisonous sweets.—Recently, in Liverpool, two children were attacked by vomiting after indulging in sweets and one of them subsequently died. Dr. Hope stated to the Liverpool Health Committee that the sweets in Liverpool were, along with other eatables, periodically analysed, and certified to the purity of the sweets there. A post-mortem examination and an inquest subsequently held on the child, a boy, aged 2 years, led to a verdict of acute congestion of the brain in consequence of violent vomiting caused by the child eating sweets after a hearty meal. Cheap sweets prove an irresistible attraction to children ; they are frequently poisonous, and the most dangerous concoctions find their way into the delicate interiors of the young. Glucose and paraffin wax enter largely into their composition, and their gaudy and frequently not altogether innocuous hues prove very fascinating to the innocent. Added to these the dirt and dust which settle upon them in their peregrinations through the city by the hawker and in their temporary resting-places in the dirty windows of the dirty shops in the town act as additional aids to their harmfulness. The children's tuck-shops in the poorer quarters should be brought more prominently to the notice of the Public Health Authorities. The Health Authorities of New York are fully alive to the fact that cheap candy and sweetmeats are very injurious to children. The analytical chemist of the Board of Health of Albany has recently brought to light an alarming condition of things. In the poorer districts of New York large numbers of children annually succumb to poisonous sweets.

Infant murderers.—In an editorial in the JOURNAL in November last we called attention to the danger of leaving infants alone with young children. Recently an illustration of this was afforded at Liverpool. An infant, aged 9 months, was left asleep in a convalescent ward of the Liverpool Workhouse Hospital, which also contained a number of older children. The nurse was absent for a few minutes, and when she returned she found the infant choking with a piece of bread in her mouth and with a scratched and swollen face. A lad, aged 5 years, told the nurse that he had put bread into the child's mouth "for fun" and covered her face with his jacket. He had also kicked her. Meningitis and pneumonia supervened as a result of the injuries, and the child died some days later. Nothing abnormal had been noticed about the boy, who left the coroner's court in charge of his parents. According to English law, a child under 7 years of age is considered incapable of committing a crime. If between 7 and 14 years of age it is left to the jury to decide whether the offender had a guilty knowledge of doing wrong. Although this child has successfully passed through the meshes of the law, he will require to be kept under observation for some time to come, and be in receipt of careful moral training to save him from himself later on in life.

Suffocated by a Cat.—The fondness many children display in taking cherished toys to bed with them is proverbial, and frequently these favourite bedfellows take the form of animal representations in the shape of rabbits, monkeys, and so on, the fur of which is usually much the worse for wear, and requires frequent stitching to prevent the shedding of the interior and for the preservation of the original outline. The more disreputable the appearance of the toy the better it is liked. Some children show a partiality for live animals, and of these cats are not unpopular. Cats, unlike dogs, evince a partiality for lying on the children's chests in close proximity to their faces, and when that is the case there is a real danger of a fatal termination by suffocation. An inquiry was recently held at Battersea into the circumstances of the death of a 1-month-old infant. A relative of the deceased stated that the infant was put to bed at mid-day, and half an hour later, when she went into the room, she found the cat curled up on the child's face. She took the cat away but found the child was dead. The medical evidence showed that the infant died of suffocation, and the opinion was expressed that this occurred by gradual deprivation of fresh air. It was not supposed that the cat lay on the child's face, but that it was too close to the child, and its fur prevented the child breathing. The weight of the cat on the infant's chest probably materially assisted in bringing about a fatal termination. It is, therefore, not wise, apart from obvious hygienic reasons, to encourage children to make bedfellows of the feline race, which should be banished from the night nursery.

Quack remedies for infants.—The danger attending the administration of nostrums to infants has been recently exemplified in the coroner's court at Stoke Newington. A quack preparation called "Liquozone," which, according to Dr. F. J. Smith, contained sulphurous acid, was taken by the father for hæmorrhoids, the mother had some for neuralgia, and it was given to the children for worms, though, according to Dr. Wynn Westcott (the Coroner) it did not appear to be recommended for worms. The elder infant died, according to Dr. Smith's evidence, from the preparation, and he strongly objected to the directions given for taking this stuff. The other child was not expected to live at the time of the inquest, and it subsequently died. If reports be true, the methods adopted by this Company require still further investigation. It is whispered that a qualified medical practitioner in receipt of a small weekly wage attends the premises of the Company for the examination of patients and for other purposes, and if rumour be correct this aspect of the case should attract the attention of the General Medical Council. Quack remedies are a *curse* to the nation, and Draconic measures are urgently required for their annihilation. Indeed, they might be made to temporarily contribute a further welcome source of revenue for the National Exchequer, or for the relief of the rates, and at the same time provide for their own obsequies, which it is hoped would follow at a date not too far removed from the increase of taxation. Quack remedy emporia with doctors in attendance should be put down ruthlessly.

Domestic science in American schools.—The Board of Education has recently issued a Report, by Miss Ravenhill, on the teaching of domestic science in the United States. An honourable place is assigned to physiology and hygiene for both sexes, and domestic science for girls in some American school programmes, though in certain cities these subjects still receive scant and contemptuous consideration. Two characteristics of the American child, according to Miss Ravenhill, are an insatiable thirst to know the "reason why" for all he does, and an admirable, though not invariably an *apropos* energy in the application of new knowledge. In the grade school teaching of personal and domestic hygiene (physiology and hygiene as it is invariably described), the best teachers lose no opportunity to inculcate ideas of duty to one's self, duty to one's neighbour, and duty to one's country. They impress that the body is worthy of, and well repays, intelligent care, that without this good work cannot be accomplished. Such practical physical morality comes within the daily observation of children; it throws a new light on their daily bath, the orderly backyard, the decent habits; it sets before them as an ideal the conduct of a self-respecting, self-controlled citizen. The evidences of home application of cookery, housewifery, sewing, and the practice of good habits are quite apparent. What impressed Miss Ravenhill even more than the specimens of home productions brought for inspection at the cookery classes were the corresponding examples of home needlework, especially where the making of a simple blouse and skirt formed part of the course. To boys instruction in physiology and hygiene appeared to lay the seeds of civic responsibility. In the High Schools household science and hygiene are of a more comprehensive character than in those in the lower grade. In physiology and hygiene, where boys and girls work together, continued stress is laid upon the close relationship of living conditions to health and working power. Here as a domestic science the method employed is almost exclusively that of lectures, followed by periods of laboratory work. Advocating the co-operation of the sexes as essential to the national well-being, Miss Ravenhill is of opinion that co-operation for a common aim creates a spirit of mutual helpfulness. The common aim of all who are concerned with the affairs of men—personal, domestic, commercial, or national, is the physical, moral, and intellectual development of each child born into the world. Upon women properly and naturally devolve the care of the young and the right conduct of the home for all whom it shelters. To this end, boys and girls should learn together—and they do in the United States—the essentials to a healthy existence, and be familiarised with the broad general principles upon which life and its functions depend for their continuance. In subsequent years, or even concurrently, girls are introduced to the processes of home-making which are indispensable to domestic well-being and happiness, while boys are encouraged to a study of the duties of citizenship. At college, as at school, opportunities for this wise preparation for their future lives are offered to the young men and women; the numbers of those glad to seize these opportunities show annual increase. Public (and parental) opinion is gradually giving intelligent heed to the growth of a movement which promises, if wisely controlled and intelligently fostered, to yield a harvest of rich national results.

Abstracts from Current Literature.

Medicine.

The evil effect of a too soft diet in children (*'The Journal of State Medicine,' vol.* XIII, *No.* 4, *April,* 1905).—**Harry Campbell.**—It is important to give children most of their farinaceous food in a form compelling adequate mastication, instead of in a soft, pappy, or semi-fluid state, for food of this kind not only fails to exercise the maxillary apparatus properly, but passes into the stomach without undergoing salivary digestion, thus disposing to digestive trouble. Before man learned to cook he had to subject his food to abundant mastication. One of the results of this prolonged mastication was that a large proportion of the starch ingested underwent salivary digestion into dextrines and maltose, and a very small quantity of crude starch passed into the stomach. Another result was the complete development of the maxillary apparatus, including the jawbones, tongue, salivary glands, and teeth. The cooking of vegetable food breaks up the cellulose framework and liberates the contained foodstuffs, thus doing away with one of the essential purposes of mastication. Consequently, when man began to cook his vegetable food he was under less necessity to masticate it than before. One of the effects of cookery was to increase the amount of crude starch passing into the stomach. The second effect was to diminish the work of the maxillary apparatus, the jaws, tongue, salivary glands, and teeth becoming smaller. With the advance of civilisation more vegetable foods were made use of and were more carefully cooked, with the result that more starch was ingested and underwent less buccal digestion than formerly. This led to less development of the maxillary apparatus, with an increased tendency to dental caries. The present period may not inaptly be termed "the age of pap." It is characterised by abundance of starchy food consumed in a semi-fluid, soft, or pappy state, as in the case of potatoes, milk, butter, or suet puddings, porridge, and soft bread, none of which invite mastication, and so pass into the stomach without adequate insalivation, and liable to set up indigestion. The third molars are much smaller than the others and tend to get jammed against the ascending ramus of the jaw, or they may be absent; while dental caries, pyorrhœa with recession of the gums, and premature shedding of the teeth are alarmingly prevalent. Some physicians recommend that from the seventh month to the end of the second year the dietary should consist of milk, rusks soaked in milk, milk puddings, mashed potatoes and gravy, thin bread and butter, pounded meat; the only really hard vegetable food permitted being an occasional biscuit. To my mind this is a most irrational diet. We must also remember that when the time for weaning arrives the jaws contain teeth. These teeth require room in which to grow, and they need a periodical stimulus to their blood and lymph circulation in the shape of adequate mastication. The nasal passages and naso-pharynx are also predisposed to disease by this soft or liquid starchy food passing into the stomach almost wholly undigested. This, together with other dietetic indiscretions, sets up gastro-intestinal indigestion. A number of irritant poisons are generated, and thus is produced gastro-intestinal catarrh. The alimentary tract now teems with poisons with fœtid motions. These poisons pass into the blood, saturate the tissues, and cause general malnutrition. This poisoning of the tissues begets the tubercular diathesis, rickets, or—what most concerns us now—a catarrhal diathesis. Hence result bronchitis, rhinitis, tonsillitis, retronasal pharyngitis, and other catarrhs. Most authorities will allow that a catarrhal state of the naso-pharynx will predispose to adenoid disease. Imperfect mastication favours it in other ways also. The nasal passages and naso-pharynx do not develop properly and are more liable to disease, and the flow of blood in the mucous membrane lining both these passages is not stimulated. I allude especially to the stimulating effect the rhythmic contraction of the pterygoid muscles must have upon the circulation of blood and lymph in the pharyngeal tonsil. I am convinced that by substituting foods which compel prolonged mastication we shall rear a healthier race. Let us have done with the rusks soaked in milk, soft bread, milk puddings, porridge, *et hoc genus omne*, and give the child a good leathery crust or biscuit. By perseveringly chewing such, he will not only afford the jaws the exercise they crave for, but he will so efficiently insalivate the starch that much of it will pass into the stomach in the form of dextrines and maltose, both of which are well adapted for digestion by the stomach and intestines. On the present system the child is made delicate and diseased through pap-feeding, and then it is sought to remedy matters by giving maltose, the very thing he can and ought to manufacture himself. Some hesitate to give children hard things to eat for fear of choking them, but there is no danger of this when once the normal pharyngeal reflex is developed, and the best way to develop this reflex is to accustom the child from an early period to eat hard things, choosing at first bones, etc., which cannot be swallowed, and then cautiously passing on to other solid foods. Directly the time for cutting the teeth arrives, the child should be allowed to bite at hard foods instead of the usual ring, etc. A chopbone or "drumstick" is just the right consistency for the tender gum of the infant, and being both juicy and tasty, much more to the child's liking than a dry insipid substance like ivory or coral. Hard, leathery crusts, sugar cane, and certain fruits may be given quite early without the slightest fear of doing harm. When in this way the masticatory instinct has been properly developed (by giving him food which compels him to do so) we may allow a certain quantity of the softer farinaceous foods. When the masticatory instinct is developed the child will masticate all his food, even the softer kinds, well. He will digest much of his starch before swallowing it, and will not suffer from that most common of all children's complaints, starch dyspepsia with its resulting toxæmic evils. His jaws, teeth, tongue, salivary glands, nasal passage, and naso-pharynx will develop normally, and the flow of blood and lymph will be duly stimulated through all these parts. Under such healthful conditions he will but seldom need the aid of the dentist or throat specialist. E. J. COWEN.

Cerebro-spinal meningitis ('*Arch. of Pediatrics*,' 1905, *vol.* XXII, *p.* 81).—**Francis Huber** gives a study based on 100 cases observed during an epidemic in New York in 1904. In three there was a prodromal period of malaise, headache, anorexia, pains, chilliness, and slight fever. In the others the onset was sudden, with two or more of the following symptoms: chilliness, fever, convulsions, local twitchings, vomiting, headache, pains and rigidity of neck, general pains, nasal catarrh, conjunctivitis, restlessness, sleeplessness, delirium, pallor, apathy, or coma. The severity of the onset was no measure of the severity of the attack. Pain in the head, mostly frontal, was a constant symptom. Pain, tenderness, and retraction of posterior cervical muscles was an early and pathognomonic sign. Kernig's sign was present at some period in nearly all cases. Other symptoms were general and local convulsions, difficulty in swallowing, strabismus, ptosis, incontinence, monoplegia and hemiplegia, conjunctivitis, otitis, serious affections of eyes and ears from central causes, photophobia and myosis in early stages, mydriasis and absence of papillary reflex later, inequality of pupils, nystagmus, hippus; hearing often very acute at onset, dull or lost later on; prostration, emaciation; various nervous symptoms and changes in mental state. Vomiting was usually present as an initial symptom and sometimes continued as a distressing feature. There was nothing pathognomonic in the course of the fever, nor did the severity vary with the height of the temperature. Remissions and recrudescences were frequent, but no prognostic value could be attached to sudden falls. Skin eruptions were fairly common in the form of diffuse mottling on face, about ears, forearms, hands, and lower limbs. *Tâche cérébrale* was common. Petechiæ occurred early and in about one third of the cases. Ecchymotic spots and purpuric plaques were seen in severe attacks. Herpes often occurred about the third or fourth day. There was generally a leucocytosis, chiefly polymorphonuclear, 18,000 to 40,000. The characteristic diplococcus was found in the cerebro-spinal fluid in nearly all cases; in one, within eight hours from the onset; in one, as late as the 104th day. In more than a dozen instances two were attacked in the same family, and multiple cases were occasionally met with in the same house. Two children were attacked after being admitted to hospital for other troubles. The *fulminant type* began with profound toxic symptoms, usually with eruptions, and was fatal in five hours to several days. Some cases *aborted*, the symptoms disappearing in a few days, but relapsed if the patients were imprudent. In the severer cases the fever persisted for one to two weeks and then improvement began. The chief complications were nasal catarrh, conjunctivitis, otitis, bronchitis, broncho-pneumonia, chronic hydrocephalus, blindness, loss of hearing or speech, mental impairment, and various paralyses. The youngest children were 13 to 15 weeks of age, and recovery occurred at this early age. Malignant, fulminant, or apoplectic cases die within three days, and treatment is of little value. The mortality is high in some epidemics, and the clinical course is so irregular that the value of treatment cannot be determined. Strong, robust children were attacked more often than the puny and weak. The greatest mortality was among those under 5 years of age. It was impossible to foresee or guard against relapses, exacerbations, or the various complications and sequelæ. Treatment must be directed to maintaining the strength of the patient by proper feeding and skilled nursing. Morphia may be necessary for severe pain and restlessness. Bromides are useful. Hot packs or baths relieve irritability and promote sleep, and reduce muscular spasm and rigidity. Phenacetin relieved headache. Iodides, ergot, leeches, and ice-bags appeared of little value. Lumbar puncture only was of use for diagnostic purposes. Lysol injections, so much belauded, did not prove encouraging. Early lumbar puncture and injection of normal salt solution gave rather encouraging results. EDMUND CAUTLEY.

Achondroplasia (*'Archives Generales de Médecine,' May* 2, 1905).—**Nobécourt** and **Paisseau.** The patient was a girl, aged 12 years, but from the shortness of the lower limbs her height corresponded with that of a child of eight. The feet were stumpy, and there was spinal curvature in the lumbar region. Enlargement of the skull was present, having been noticed at birth. Her weight was 44½ kilos. instead of 29, due chiefly to the presence of fat. The breasts were abnormally prominent, the pubic hairs had grown, and menstruation had occurred. There was no mental defect observed. The case in some respects coincides with the achondroplasia described by Marie in adolescents and adults. T. P. Beddoes.

Infantile potomania (‘*Archives Generales de Médecine,*’ *May* 16, 1905). —**Achard** and **Ramond.** The patient, aged 7 years, and weighing 15 kilos., drank seven or eight litres a day, passing a corresponding amount of urine without sugar or albumin. There was no loss of weight or other ill effect. The allowance was cut down to a litre and a half. The patient had no signs of disease, but was mentally deficient. T. P. Beddoes.

Congenital paroxysmal cyanosis (‘*Thèse de Paris*’).—**Sébilleau.** In these cases the cyanosis is temporary, occasionally lasting only a few minutes. A murmur exists over the pulmonary artery area, and there is slight blueness of the fingers. The red corpuscles are increased in number. In two cases examined after death, the author found constriction of the orifice of the pulmonary artery and a communication between the two ventricles. He considers the paroxysms of cyanosis due to spasm of the infundibulum of the pulmonary artery, which increases the obstruction of the vessel, so that more blood passes to the left side of the heart.

T. P. Beddoes.

On the diagnostic value of irregularities in the pupillary edges (‘*Arch. de Neur.*,’ 1904, *p.* 348).—**J. Piltz.**—After describing the various irregularities that may occur in detail, the author lays stress on their relation to syphilis and the parasyphilitic affections. He makes, however, this proviso: in new-born infants the greatest irregularities may be occasionally present, the shape of the pupil changing from moment to moment. This is attributed to non-development of that synergy between the different sequents of the iris that later obtains. A. Ernest Jones.

The convulsive attack of hysterical cough (‘*Rev. de Médecine,*’ *November*, 1902).—**Abadie** and **Grenier de Cardenal** describe three cases showing this phenomenon. Dread of consumption was present in each case. The preconvulsive stage comprised sensory auræ, laryngeal constriction, forced inspiration, contraction of the abdominal muscles. The convulsive stage comprised a tonic phase, with fixation of the chest, tetanic contraction of the inspiratory muscles, and efforts at inspiring combined with laryngeal noises, and a clonic stage of thoracic and abdominal convulsions, with prolonged expiration and explosive cough. The patients returned to their normal state without passing through any period either of excitement or of sleep. A. Ernest Jones.

Catatonia at an early age (‘*Neurolog. Centralblatt.*,’ *vol.* XXI).—**H. Mucha.**—The patient was a girl, aged 15 years. After several days of motor excitement stupor occurred, with stereotyped movements and attitudes, rigidity of the body, interrupted by catatonic spasmodic attacks, verbigeration, and refusal of food. The author attributes the accidents to the onset of menstruation, there being no hereditary taint or other causal factor. The age is unusually early for catatonia. A. Ernest Jones.

The part played by the liver in the cyclical vomiting of children (‘*La Clin. Infant,*’ *March*, 1905).—In the discussion which followed

Richardière's paper at the Soc. de Pediat de Paris, **Marfan** expressed the opinion that attacks of cyclical vomiting with acetonæmia represented a distinct affection which ran in families; it was not uncommon to see a case in a child, and the next day or the day after a brother or sister would be attacked in the same way. The presence of acetone was not the direct cause of the vomiting. The acetonæmia should be sought for while the attack was at its height and was constantly present. The vomit was usually colourless, not bilious, and besides, the presence of bile did not necessarily imply participation of the liver; bile was found in the vomit of renal colic. Enlarged liver was often noticed, but was not constant. Jaundice was a rare complication, and probably was secondary, as in pneumonia. Hereditary cholæmia also was not observed in all the cases. The hepatic origin of these attacks was plausible, but not proved. He thought the attacks were often a manifestation of rheumatism. He had had several cases which proved conclusively that these attacks may be independent of appendicitis, and may co-exist with it, and may recur after operation.

Comby quoted statistics of 34 cases, in 2 only of which the appendix was distinctly implicated; 24 were girls and 10 boys; the greatest number of cases occurred between 2 and 10 years of age. A relation existed between these attacks and those of migraine: sometimes they ceased and were replaced by attacks of migraine. As antecedents were found: gout, 10 cases; migraine, 13 cases; neuralgia, 3 cases; and sometimes eczema. Only twice was enlargement of liver noticed. Constipation existed in 30 cases, adenoids in 3 cases. In 6 cases the attacks were afebrile. The vomit has always a strong acid smell, and is sometimes bloody. Cases are confounded with meningitis and appendicitis. In the large majority the prognosis is favourable; 1 case was fatal after a hæmorrhage. These cases were met with in children of a neuro-arthritic diathesis, and frequently among the richer classes there were other manifestations of arthritism. Constipation and muco-membranous enteritis are often noticed. Jaundice was rare. Treatment: vegetable diet and hydropathy. VINCENT DICKINSON.

Head-nodding in children (*'Med. Press and Circular,' May 3, 1905*).—**Norman Meachen** reports two cases of this peculiar affection, known also by other names, viz., "nodding spasm" (Stephen Mackenzie), "head-shaking" (Gee), "gyrospasm of the head" (Frederick Petersen), etc. Both cases were males, aged 1 year, fairly well nourished, and with no evidence of rickets; both had been breast fed; both exhibited rhythmical movements of the head, alternating irregularly in character between vertical and horizontal. These movements ceased when the attention was strongly arrested, and also during sleep. Marked double nystagmus in one case, but not in the other. No pupil signs and no history of any previous illness. Mentally both infants were bright. Dentition, rickets, and injury are suggested as predisposing causes. Raudnitz considered deficient light a chief factor in the development of the condition. Males and females are equally affected. Nystagmus is nearly always present. Suggested relationship to epilepsy (Marcus Gunn). Pathologically Petersen supposes that some irritation is present at the roots of the spinal accessory and upper spinal nerves, added to which is some defect in the visual association fibres from malnutrition. Prognosis is good. Movements usually yield to potassium bromide and careful hygiene. ALEC H. BREWER.

Blood changes in meningitis in children (*'Lancet,' May* 6, 1905).—**Sidney W. Curl,** in a thesis on this subject, arrives at some very valuable conclusions. He examined the blood of ten cases in all, eight of which were proved to be tuberculous by post-mortem examination. The hæmoglobin percentage showed no constant or characteristic features, and is therefore of little diagnostic value. In 60 per cent. of the tuberculous cases there was no increase in the number of leucocytes. As regards the percentage of the different varieties of leucocytes, it was noticed that there was a diminution of the eosinophiles and an increase in the large lymphocytes and transitional cells in the tuberculous cases. In serous meningitis the eosinophiles were found to be normal or increased in number. In six of the tuberculous cases the large lymphocytes and transitional cells were increased in number, and in one of these they formed 23 per cent. of the total leucocyte counts. As Curl points out, a diminution or absence of the eosinophiles is also the rule according to other observers. He then goes on to explain why we should have this absence of leucocytosis in tuberculous meningitis, and gives four possible theories. The diminution in the number of eosinophile cells is not readily explained, as the function of these cells is only imperfectly understood at present. The large lymphocytes and transitionals, being intensely phagocytic in nature, their increase is most probably due to an attempt on the part of the body to get rid of the offending agent, namely, the tubercle bacillus. The conclusions which he draws from the results of his investigations are that in tuberculous meningitis in children: (1) the red-cells are usually present in normal or increased numbers; (2) the majority of cases show no leucocytosis; (3) the eosinophiles are reduced in number; and (4) the large lymphocytes and transitional cells are generally present in increased proportions. JAMES BURNET (Edinburgh).

Pathology.

Diphtheria complicated with subcutaneous emphysema (*'Canadian Journal of Medicine and Surgery,' vol.* XVII, *No.* 4, *April,* 1905).—**W. J. Wilson.** Alice, aged 10 years, always delicate, was taken ill with diphtheria December 27, 1904. She was a mouth-breather and had adenoids and very large tonsils. First seen December 30. A thick membrane was found covering the tonsils and extending down into the larynx and up through the nose. There was commencing laryngeal stenosis. She was given 2000 units of Mulford's antitoxin, and 20 grs. calomel evaporated every three hours under a tent, and in the intervals steam with compound tincture of benzoin and eucalyptus oil impregnated. This fumigation was kept up for two days and the steam ten days. The membrane separated on the third day after the antitoxin. A spray of hydrogen peroxide was used every two hours from the first. Some membrane reformed and the spray was changed to solution of boric acid and alum. There was some swelling of the glands, especially on the right side. On January 1 the glandular swelling was less, but the neck in this region was more swollen, and a marked crackling sensation was felt on palpation. This emphysema extended up over the right side of the face and then appeared in the left upper eyelid. The right eyelids were very slightly affected, also the lower left eyelid. The arms and trunk were swollen about $\frac{1}{2}$ inch in depth. The legs were not affected. During the greater part of the illness there was mild delirium with at times a good deal of drowsiness. The patient was given liquid nourishment with stimulants, and a mixture of iron and nux vomica.

The emphysema disappeared in about thirty days, remaining longest over the lower part of the abdomen and flanks. In a swab from the throat Dr. Harold Parsons found a bacillus answering to the description of the gas bacillus. In an anaerobic culture in agar, gas was produced in the depths of the media. Gas was also found to a slight extent in an inoculated rabbit. The rabbit, however, seemed to show rather good resisting power against the germ. A culture was not taken from the emphysematous tissue. The appearance of the emphysema on the side of the neck and not at the site of injection of the antitoxin, as also the finding of a gas-producing germ in the throat swab, would seem to free the antitoxin from the suspicion of infection. No efforts at intubation had been made, and the patient had no violent coughing or straining likely to either produce a tear in the laryngeal mucosa or force respiratory air into the tissues. This with the appearance of gas in the left upper eyelid without a perceptible spread across the face from the right side, the length of time the gas remained in the tissues, the finding of a large rod with a capsule in the swab, and the bacteriological findings, weigh strongly against the theory that ordinary air was the source of the emphysema.

E. J. Cowen.

Typhoid infection (*'Thesis,' Paris,* 1905).—**P. Block.** Thirteen girls with gonococcic vulvo-vaginitis contracted typhoid fever from the same basin and sponge being used by one nurse for their vaginal toilet. The source of the fever was proved firstly by girls only being attacked, the boys in the same ward escaping, and by the arrest of the epidemic as soon as separate basins and sponges were used for each case. It is suggested that the gonoccocci in the vagina prepared the soil for the typhoid bacilli, the alimentary canal becoming infected from the vagina by the discharge running down into the rectum. Or what is more probable the infection was carried to the mouth by the patient's hands. T. P. Beddoes.

Multiple abscesses of brain simulating cerebro-spinal meningitis (*'La Clinique Infant.,' May,* 1905).—**Rais** reports this case from Dr. Variot's clinic at the Children's Hospital, Paris. Patient was a girl, aged 5 years, whose mother lost her first husband and child from consumption, the children of the second marriage being healthy. The illness commenced with an ordinary coryza, which had attacked all the family, at the end of which headache and dry tongue supervened, but there was no vomiting, constipation, or fever. After four days she was well enough to go out, but the same night (April 10) was seized with severe headache, bilious vomiting, constipation, slight retraction of head, and rise of temperature (39·9° C.). The symptoms became more marked, especially the retraction, which was quite opisthotonic. The temperature, however, fell to 38° C.; pulse and respiration regular, slight drowsiness, but no loss of consciousness. April 13.—Lumbar puncture drew off a homogeneous liquid, slightly tinted with blood. The condition remained almost stationary. On April 15 lumbar puncture again drew off some hæmorrhagic liquid, with an excess of polynuclear leucocytes. April 18.—Continuous sharp cries, opisthotonos and Kernig's sign intensely marked, much depression, and copious diarrhœa. Evening temperature did not rise above 38·5° C., slight photophobia. April 19.—The cries ceased, coma and convulsions supervened, temperature rising to 41·4° C. April 20.—Convulsions ceased; temperature fell to 37·8° C. External strabismus and mydriasis noted in left eye before death. The autopsy showed abscesses of the size of small nuts in the frontal, parietal, occipital, and sphenoidal lobes of the right side; abscesses in the same lobes of the left side but of much larger dimensions, two being as large as mandarin oranges. None of these abscesses affected the optic thalamus or the internal capsule; five of them opened into the arachnoid spaces, one into the ventricle. The cerebellum and the bulb were healthy. Over the dorsal and lumbar cord the pia mater was congested and covered with a thick adherent false membrane. In the right lung was a caseous bronchial gland, in the left lung two abscess cavities. The case is interesting in that it simulated clinically a cerebro-spinal meningitis, and in the absence of functional troubles or circumscribed paralyses in connection with localisation of the cerebral abscesses which appeared to be secondary to the pulmonary abscesses of doubtful origin. VINCENT DICKINSON.

Case of Sach's family amaurotic idiocy, with histological examination (*'Arch. de Neur.,'* 1905, *vol.* XIX, *p.* 52).—**E. Frey** describes a case of this disease, with the classical features. Death occurred at the age of 20 months. At the autopsy the cortex of the frontal and parietal lobes and of the cerebellum was very hard—in fact, almost cartilaginous. Microscopical examination showed degeneration of the pyramidal tracts, also, in the dorsal and cervical regions, of the columns of Goll and to a less extent of the cerebellar tracts. In the brain the degeneration affected, besides the pyramids, the superior cerebellar peduncles, the external capsule, and the median and lateral part of the optic thalamus; integrity of the lenticular nucleus, red nucleus, and restiform bodies. In the cortex there was extensive disease in the Rolandic area and in the occipital lobes, less in the frontal and temporal lobes. In the cerebellum the dentate nucleus and the white matter were more affected than the cortex. There was no sign of inflammation anywhere. There was no degeneration of any cranial nerve, not even of the optic, although the chiasma and optic bandelette showed distinct changes. *Conclusions:* The pathological process is not a congenital arrest of development, but an exclusively extra-uterine degeneration, which affects the whole of the central nervous system, though pre-eminently the cerebral cortex. A. ERNEST JONES.

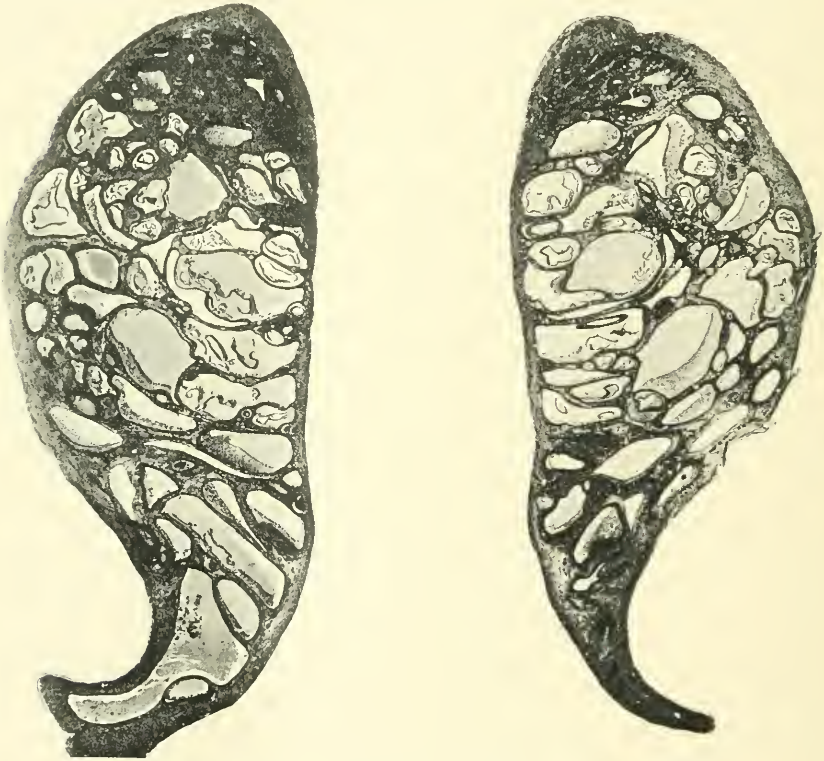
A pathological study of amaurotic family idiocy (*'Amer. Journal of the Med. Sciences,'* 1905).—**Spiller.** All the cases had a very typical course and ended fatally at 3½ years old. They all showed the cherry-red spot in the fovea centralis, and a histological examination showed the presence of a primary degeneration of the ganglion cells of the retina and of the optic nerve. Spiller finds in the rest of the nervous system that all the ganglion cells are somewhat abnormal, there being everywhere a slight nerve degeneration without any signs of inflammation, and he considers there is some relation to other degenerative conditions. McKee considers, like Sachs, that it has some relation to hereditary ataxy. It is still uncertain why this disease is almost limited to children of Russian Jews.

J. PORTER PARKINSON.

Dysentery bacilli in the diarrhœa of children (*'Journ. of Infectious Dis.,'* 1905).—**Weaver** and **Tunnicliffe** found in 112 cases dysentery bacilli 26 times, the Flexner Harris and the "Y" Typhus being almost equally frequent. The causal connection between the bacilli and the diseases is doubtful, as these organisms were found equally in normal children's stools. **Heineman** (*ibid.*) studied the agglutinating power of immune rabbit sera upon 33 cultures of the dysentery bacillus group, isolated from cases of summer diarrhœa. The bacilli used were those of Shiga, Kruse, Flexner Harris, and "Y." The results were that one culture was agglutinated nine times, two cultures twelve times, three cultures six times, and twice all four were agglutinated. **Michael** (*ibid.*), in examining the intestinal contents for dysentery bacilli in 97 cases, says that dysentery bacilli are not found in all cases of slimy and blood-stained stools; but that all the cases where they were found followed the usual course of ilio-colitis; but the ilio-colitis cases in which bacilli were not found showed the same clinical picture.

J. Porter Parkinson.

Cystic degeneration of the ovaries in a stillborn foetus (*'The British Gynæcological Journal,' February*, 1905, *article*, "A Short Visit to some Foreign Clinics").—**H. Macnaughton-Jones** brought to London some sections of ovaries made by Professor Schroeder of Bonn, showing cystic degeneration in a stillborn fœtus. The degeneration occurred in the Graafian follicles; the stroma was studded with inflammatory corpuscles. Dr. Cuthbert Lockyer, who examined these sections microscopically, reported that the features which struck him as most characteristic were: (1) The extensive cystic change; (2) the extreme vascularity of the organ.



Cystic degeneration in ovaries of stillborn child (Schroeder).

The cystic change resulted from distension of Graafian follicles. Many of the cystic spaces were lined by epithelium derived from the stratum granulosum. Other cysts showed no such differential lining; it (the latter) had either disappeared or had never been formed. Degenerative ova could be seen in a few of the cystic spaces, whilst in the cortical stroma there were numbers of large discrete uninuclear cells, presumably primordial ova, lying free and not enclosed in follicles. The swollen connective-tissue cells around the cysts also formed a very notable feature.

GEOFFREY PLANTAGANET.

Therapeutics.

Alkalies in infant feeding ('*Arch. of Pediatrics*,' 1905, *vol.* XXII, *p.* 130) —**T. S. Southworth** points out that the addition of alkalies to cow's milk is based on the erroneous supposition that human milk is alkaline, whereas it is actually faintly acid. In practice much more alkali is usually added than is necessary to reduce the acidity of cow's milk to that of human milk, and the child is fed on alkaline milk. Clinically this is generally satisfactory. The alkali neutralises the lactic acid and prevents the formation of the tough curds of lactate of paracasein and softens those already formed. But if the food is over-alkaline digestion by the pepsin and hydrochloric acid in the stomach is prevented and digestion becomes purely intestinal. If no alkali is added the tough curds formed by the lactic acid and rennet ferment, are digested with great difficulty, and cannot pass through the pylorus. A moderate amount of alkali permits the passage through the pylorus of a certain proportion of the contents of the stomach before acidity is sufficiently developed to cause clotting, and by this means digestion is divided into partly gastric and partly intestinal. Lime-water and bicarbonate of sodium should not be regarded as interchangeable alkalies. The former thickens milk and changes its consistency, favouring the precipitation of casein in more flocculent masses. It is only weak as an antacid, one ounce neutralising about three quarters of a grain of pure hydrochloric acid. On the other hand, the bicarbonate does not alter the consistency of milk, but, if the mixture is not heated, carbonic acid gas is set free in the stomach, and the minute bubbles of gas make the curd more porous. If the mixture be heated the gas is driven off and carbonate of sodium is formed, a compound having a greater alkaline reaction to litmus and a greater retarding action on curdling with rennet. And the curd, when formed, is not porous. In addition, 20 grains of the bicarbonate is the amount usually taken as the equivalent of 1 ounce of lime-water, but 20 grains neutralises 9 grains of pure hydrochloric acid. Another consideration must be taken into account. Experiments show that 1 ounce of lime-water and 20 grains of bicarbonate have about the same effect on curdling by rennet. Commercial bicarbonate of sodium contains an alkali, but is itself an antacid. Its alkalinity is due to impurities in the form of sodium carbonate. Hence its alkalinity is variable, and it is the alkali, not the antacid, which stops curdling by rennet. Hence the bicarbonate is much more powerful than lime-water in promoting gastric digestion. The addition of alkalies to milk is mainly of importance in influencing the place and type of digestion. EDMUND CAUTLEY.

The flat warts of children ('*La Clin. Infant.*,' *March*, 1905).—**M. G. Bureau** gives an interesting description in the '*Gaz. Méd. de Nantes*,' No. 53, of these structures, which were first differentiated by Besnier

These warts are very flat and pale yellow or even colourless, having a smooth surface with a slight tendency to desquamation. Always small, from 1 to 3 mm. on an average, rarely isolated, and having a tendency to join and form groups. Often arranged in lines corresponding to the direction of scratching, at other times forming irregular figures. This arrangement proves that they are decidedly auto-inoculable. They are most frequently met with between the ages of 5 to 10, and 15 to 20 years, on the cheeks and side of forehead, the hand and fingers, on the palmar surface of which they present a peculiar appearance caused by a kind of perforation of the horny layer. They are quite painless, and may persist for a long time as isolated elements, and may suddenly become general, covering in the space of a few weeks the face and hands; they may also disappear spontaneously and rapidly, and cases of cure by suggestion are probably owing to this characteristic. Salicylic acid has proved the most efficacious form of application and can be used in the form of the following ointment devised by Dubreuilh: lanolin, 20 grammes; calomel, 1 gramme; acid salicylic; resorcin āā, 2 grammes. When, however, the warts are very numerous and mainly on the hand it is better to use collodion flexile with salicylic acid and resorcin: of each one part in eight. This is applied every night for seven or eight days, at the end of which period a hot bath removes the collodion and the warts have probably disappeared.

VINCENT DICKINSON.

Otology, Laryngology and Rhinology.

Glioma of the nose—report of two congenital cases ('*The Amer. Journ. of the Med. Sciences*,' *vol.* CXXIX, *No.* 5, *May*, 1905).—**J.P. Clark** reports as follows. The elder, a boy, aged 2 years, presented a rounded tumour of the nose the size of a robin's egg, which dated from birth, and caused considerable deformity. It was soft, and strongly resembled a fatty tumour. Its site suggested a possible meningocele, but it was without pulsation and was unaltered by crying. The left nostril was almost completely obstructed by a pinkish-grey polypoid growth. A piece removed from this site consisted chiefly of delicate fibrils and peculiar cells, a typical neuroglia. The neuroglia was not sharply marked off from the connective tissue, but infiltrated the spaces of the tissue after the manner of a sarcoma. The tumour was regarded as a glioma, possibly in continuity with the brain, but more likely to be associated with a teratomatous tumour in the neighbourhood. The child was lost to observation for a time, but Clark followed the case up and found that it had been operated upon in a local hospital. The general health of the child appeared excellent, and there was no local evidence of any new growth. The tumour had not been saved for microscopical examination, nor could any description of the gross appearances observed at the operation be obtained. A high power drawing of the specimen is shown and a photograph of the child. The younger, a male infant, aged 10 weeks, had not breathed well through the nose since birth, an obstruction being noticed in the left nostril, but there was no external deformity. A pinkish-grey polypoid mass was seen in the left vestibule, causing almost complete obstruction of that side, and the site of the growth appeared to be the left septum. A piece removed for examination showed the structure and staining reaction of a glioma. A high power drawing of the tumour is shown. The gliomatous tissue appeared to infiltrate and distend lymph spaces, and columns of it were seen in the submucosa. The writer is inclined to the opinion that these growths arose during the process of fœtal development through the shutting out of some neuroglia, or more exactly the embryonic tissue which becomes neuroglia from the brain cavity in the coming together of the two lateral halves of the frontal bone. In both cases the tumours were apparently benign. He states that a thorough search of medical literature for a period of more than ten years past reveals no other reported case of glioma of the nose. GEOFFREY PLANTAGANET.

Laryngitis stridulus and adenoid vegetations ('*Arch. Internat. de Laryngologie, d'Otologie, et de Rhinologie,*' *January*, 1905).—**G. Prota,** Naples. Coupard, in 1887, was the first to draw attention to the relationship between these two conditions, by showing that in certain children a simple catarrhal laryngitis assumed the characteristics of a spasmodic affection when associated with the presence of adenoid vegetations. He considers it probable that many of the cases described by others as cases of laryngitis stridulus were merely cases of exacerbations of the nocturnal symptoms of suffocation (night terrors), due to the presence of adenoid vegetations. Others have written more recently on this subject. Prota discusses the various views expressed with reference to it, and appends a series of ten cases, showing that adenoid growths produce laryngitis stridulosa, that their removal cures this condition, and that the laryngitis so produced is totally distinct from congenital stridor and stenosis of the larynx and trachea.

RICHARD LAKE.

Laryngeal papillomata in children, and their treatment ('*Archiv für Kinderheilkunde,*' Band 41, Hefte 1 and 2, 1905, p. 21.)—**A. Neubauer.** Laryngeal papillomata are common in children; they may even be present at birth. They often remain undetected and frequently kill the patient by suffocation; even in large towns these cases are not uncommonly brought to the specialist only when urgent dyspnœa has developed. The author describes the symptoms and the way in which dyspnœa is produced—partly mechanically and partly by causing spasm, the latter especially when the growth is pedunculated. In skilful hands laryngoscopy is quite as practicable in children as in adults. Retrogression of papillomata occurs spontaneously, after tracheotomy or after infectious diseases, but is quite exceptional. For removal the author advises that the endolaryngeal method be always tried, and advocates the use of a modified Lori's tube—a cannula with a sharp-edged fenestration—for cutting away the growths; he gives five cases in which this was done successfully, the ages of four of the children being 16 months, 3 years, 3 years, and 2 years. HAROLD BARWELL.

Foreign body in the bronchus, removed by means of a magnet ('*Archiv. für Laryngologie,*' Band 17, Heft 1, 1905, *p.* 151).—**W. Burk.** The patient was a boy, aged 3 years, with a history of having swallowed a metal screw; immediately afterwards he became blue in the face and had a violent fit of coughing for ten minutes. Over the whole of the left side of the chest there was delayed respiration, tympanitic dulness, and much diminished breath-sounds; the right side was normal. A skiagraph showed a shadow near the left side of the sternum between the fifth and sixth cartilages. Dr. Short introduced a bronchoscope through the mouth under partial anæsthesia; the attempt failed because, when the instrument was passed into the left bronchus, the right tube was occluded and severe dyspnœa ensued. Tracheotomy was then performed, and the bronchoscope passed through the opening; in this way a magnet, with a long arm made for the purpose, was introduced and the screw removed. The patient developed pneumonia seven days later, but recovered, and is now—after two months—in good health. HAROLD BARWELL.

Surgery.

Congenital pyloric stenosis ('*Münch. Med. Wochenschr.*,' *February* 14, 1905).—**T. J. Schmidt**, in an article on this subject, points out that if the treatment is to be successful the diagnosis of the condition must usually be made in the absence of two of the classical symptoms, namely, peristaltic movements of the intestine and the presence of a tumour. He believes that a certain proportion of the milder cases can be cured by dietetic treatment combined with small doses of opium. In all severe cases he advocates operation as soon as a diagnosis can be made. The author is of opinion that the best results are obtained from the performance of gastro-enterostomy rather than pyloroplasty or Loreta's operation. He says that the fatal results are solely due to the bad condition of the patients.

P. LOCKHART MUMMERY.

The treatment of harelip and cleft palate ('*The Journ. of the Amer. Med. Assoc.*,' *March* 18, 1905).—**G. V. T. Brown**, in an article on this subject, discusses the treatment of cleft palate in infants by forcible approximation of the two maxillæ. He objects to this method of treatment, as he believes it to be attended with a high death-rate. He prefers to wait till after the eruption of the deciduous teeth and then to attempt approximation of the bones with screw apparatus. He strongly advocates the use of dioxygen as a means of securing aseptic healing after these operations.

P. LOCKHART MUMMERY.

Gonococcus infection in children ('*Med. Record*,' *March* 25, 1905). [A paper read before the New York Academy of Medicine.]—**L. Emmett Holt** gave his experience of eleven years' work in the Babies' Hospital. The most common form of gonorrhœal infection met with was vaginitis. The author mentions the infectiousness of this malady among children. On one occasion three cases of vaginitis which were unintentionally admitted to the country home resulted in twenty-two secondary cases developing. In 1904 a rule of the hospital was made that no female child should be admitted without a microscopical examination of the vaginal secretion. This system resulted in the detection of many cases which would otherwise have been undetected, and was largely effectual in preventing epidemics of the disease in the hospital. No case of extension of the disease from the vagina to the uterus or tubes was met with, and no case of cystitis was noted.* A microscopical examination of all cases showed that a non-specific purulent vaginitis was uncommon. Dr. Holt reported twenty-six cases of gonorrhœal arthritis in children under 3 years of age. Of these nineteen were in male and seven in female children. In five cases the disease was confined to a single joint, and in sixteen three or more joints were affected. In children whose condition was fairly good incision and washing out of the affected joint was usually sufficient to effect a cure. Dr. Holt gave it as his opinion that after an outbreak of vaginitis in a ward of a children's hospital fumigation should be carried out as thoroughly as after an outbreak of scarlet fever. Other speakers at the same meeting agreed as to the prevalence of acute gonorrhœal vaginitis as an epidemic disease in children's hospitals and the great difficulties in eradicating it.

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* "Gonorrhœal Inflammation of the Uterine Appendages detected by Bimanual Examination," by George Carpenter, M.D., 'BRITISH JOURNAL OF CHILDREN'S DISEASES,' vol. i, p. 437. "Salpingitis in a Child aged 6," by L. A. Bidwell, F.R.C.S., *ibid.*, p. 435.

P. Lockhart Mummery.

Vulvo-vaginitis (*'Archiv. of Pediatrics,'* 1905, *vol.* XXII, *p.* 106).—**A. C. Cotton,** of Chicago, reports on the specific character of an epidemic of vulvo-vaginitis in children in hospital. The discharges were offensive, greenish, or yellowish, purulent and intractable. Infection spread rapidly in spite of ordinary means of prevention. The gonococcus was identified by its morphology, staining, and cultural reactions. In the course of thirteen months, eighteen out of 151 girls were affected, and one out of 168 boys. The duration of each attack varied from 40 to 252 days. Lowered vitality predisposed to infection. The first case was one of urethritis in a boy, aged 2 years, under treatment for rectal fistula. The second was in a girl with typhoid fever, two days after admission and five days after the reported cure of the first case. Patients thus affected should be isolated and put in charge of a special nurse. Imperfectly disinfected diapers are a possible source of infection. Treatment must be somewhat heroic. Most cases required 10 per cent. protargol douching every four to six hours, preceded by 1 in 2000 solution of potassium permanganate. Additional packing of the vagina with gauze saturated with 2 per cent. protargol was sometimes necessary.

Edmund Cautley.

Dilatation of the colon (*'Lancet,' May* 6, 1905).—**Fletcher** and **Robinson** exhibited at the Clinical Society a case of dilatation of the colon, beginning at the hepatic flexure and ending in the rectum at the pelvic floor. The patient was a boy, aged 12 years, and had always had a large abdomen. About six months before there was a marked increase in the abdominal distension, accompanied by constipation and some pain in defæcation. Abdominal section disclosed the dilatation and the thickening of the large intestines. The circumference of the upper part of the rectum measured 19¾ inches. The bowel was emptied *per anum* by manipulation, many pounds of soft dark fæces being forced out. The abdomen was then closed, and the result had been very satisfactory.

James Burnet (Edinburgh).

Branchial appendages in the neck (*'Revue Mensuelle des Maladies de l'Enfance,' April*, 1905, *p.* 145).—**H. Rieffel.**—A case is recorded of a boy, aged 6 years, with a congenital appendage 1 inch long, situated in the centre of the superficial surface of the left sterno-mastoid, 3 cm. above the sterno-clavicular joint. Nothing abnormal could be seen about the tonsillar region. On removal, the growth contained a bar of fibro-cartilage bifurcated at each end. Appendages are common enough in the pre-auricular region, but are rare in the neck proper. The author has collected 37 cases and gives their references. As to sex, 17 occurred in boys and 7 in girls; they were unilateral in 27, bilateral in 10; of the former 11 were on the right side, 14 on the left. The majority—28 out of 37—were placed 2 to 3 cm. above the sterno-clavicular joint; rarely they were situated at the level of the thyroid cartilage, never above the hyoid bone. The point of implantation was always intimately connected with the anterior edge of the sterno-mastoid. One appendage contained bone, many contained cartilage, which was always of the elastic fibro-cartilaginous variety. Unlike the pre-auricular appendages, these are not associated with other serious deformities. They are always due to developmental disturbances of the second branchial arch; in no case was a fistula of the second cleft described to co-exist, and no deep connections to the air-passage or its skeleton have ever been traced. The author then discusses fully the mode of origin of these structures.

HAROLD BARWELL.

Congenital dislocation of the shoulder (*'Journ. de Médecine de Bordeaux,' January* 29, 1905).—**Gourdon.**—Skiagram showed the end of the right clavicle above the acromion. The head of the humerus was above and behind the rudimentary glenoid cavity. The shoulder was raised. The muscles were atrophied, but retained their electric excitability. The measurements were:

	Right.	Left.
From the middle of the sternum to the acromion	13½	16
From spinous process of the seventh cervical vertebra to the acromion	14½	17
Spinal border of the shoulder-blade	12	12
From the superior angle of the shoulder-blade to the acromion	10	12½
Length of the humerus	21	24
Length of the ulna	18	20
Circumference of the arm	19	20
Circumference of the fore-arm	17	20
Length of the hand	12½	14
Breadth of the hand	6½	7½

Of the movements of the shoulder-joint elevation was especially limited, less so circumduction and rotation, which caused creaking. The author adopts the view of Sprengel, that the dislocation is due to twisting of the fœtus with the fore-arm behind the back. T. P. BEDDOES.

Calculus with a hair-pin nucleus (*'Journ. de Médecine de Bordeaux,' January* 22, 1905).—**Begouin.**—A girl aged 17 years passed the pin into the bladder in February, 1899, causing frequency of micturition with two or three drops of blood at the end of the act; this lasted two months. The urine remained clear till 1903, when fever and loss of flesh was noticed. In July, 1904, there was evening elevation of temperature, incontinence of fœtid urine, for which suprapubic lithotomy was performed. The bladder was sutured, no fistula remained. The calculus weighed eight ounces.

T. P. BEDDOES.

Case of cephalic tetanus: cure (*'Arch. de Neur.,' November,* 1904, *p.* 425).—**G. Haltenhoff** records such a case in a boy, aged 3 years, who fell on to the end of a stick with which he was making a hole in the earth. The stick pierced the lower part of the right orbit. Two days later he was given an injection of antitetanic serum, but paralysis of the right sixth and seventh nerves supervened. This was accompanied by tonic blepharospasm and trismus. Recovery took place. The prognosis of cephalic tetanus is better than that of other forms of traumatic tetanus, but is worse when paralysis of a cranial nerve occurs. A. ERNEST JONES.

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Original Articles.

THE FEEDING OF ATROPHIC NURSLINGS.

By G. Variot, M.D.,

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Atrophic nurslings are numerous within the boundaries of Paris. They are all children whose growth is retarded by gastro-intestinal troubles, who " don't come on " as is popularly said of them. When in 1892 we outside the maternity hospitals adopted the method of supervising nurslings just introduced by the accoucheurs, we soon recognised in the Belleville dispensary that the great majority of our infant population is composed of atrophics, and notably by feeding-bottle atrophics who have been reared on bad milk, had improper feeding, and who have otherwise suffered from neglect of alimentation and hygiene.

It seemed to us necessary to distinguish between the children whose growth had been temporarily arrested, but who could under a sterilised milk diet be set on the path towards a healthy manhood or womanhood, and the class of pronounced athrepsics of the Parrot type, who have reached a stage of consumptive cachexy almost always incurable.

For this reason we determined to restore in France the notion of *infantile atrophy* which is admitted abroad, basing its study on the indications furnished by the scales. Since 1898 we have had the satisfaction to see that most of the French pediatrists, and especially those who concern themselves with infantile hygiene, Messrs. Narfaw, Nanchamp, Zerrien, Vildermann, Carel, Jégourel, Saint-Albin, etc., have accepted the term of *infantile atrophy* corresponding to various clinical types which are distinct from *athrepsia* properly so called.

The most precise and exact definition of this morbid syndrome has been given by M. Jégourel in his thesis.* He puts it thus: "Infantile atrophy is a hindrance of growth in both weight and size more or less pronounced and prolonged, arising from gastro-intestinal troubles. Its degree may be determined by comparison with the weight and size of a normal child of the same age."

It seems unnecessary to state that trouble in nutrition is one of the most serious afflictions of nurslings. In the early stages of being the primary function of the child is to grow. The nourishment it demands and its power of assimilation are very similar to those existing before birth. The nutritive functions have preserved the fœtal type, since the nursling has double his birth weight at five months, and three times the same weight at the age of 1 year. Neither during the second year nor later is such an active growth manifested. The annual weight increase seldom exceeds 2 to 3 kilogrammes, except at the age of puberty, when it is a little higher. Atrophy is therefore a vital disturbance resulting from impaired performance of the digestive functions. Its prevalence is explained by the numerous outrages upon hygiene, especially in the province of artificial nourishment.

Although both abroad and more recently in France attention has been given to the proper nourishment for healthy nurslings, there has been a considerable neglect of the class of atrophics who continually frequent our "gouttes de lait." Since the rearing of the latter is more difficult than that of normal infants, it demands the greater care. Diet ought to be studied more closely, and its constituents and quantity calculated more scientifically from cases under observation. This is the work with which we have charged ourselves since we organised our milk depôt at Belleville.

I would first record briefly the methods of determining the food of healthy infants. Attempts have been made to calculate theoretically and mathematically the quantity of milk necessary to provide the proper number of heat units produced by the child and recorded on the calorimeter (ration of maintenance). Then there has been added a quantity to permit the proper gain in weight (ration of growth).

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* "Ponderal Atrophy of Breast-fed Infants," 'Thèse de Paris,' 1904.

Calculations thus made led to results of which the precision has been somewhat exaggerated, but which coincided approximately with opinions formed from direct experience. M. Saint-Albin in his work upon the calorifications of atrophics,* has shown that, with trifling differences, the quantities inscribed upon my graduated feeding-bottles correspond to the heat-giving value of the quantities of milk required calculated to a nicety.

The glass milk bottles in use in the Belleville dispensary are graduated showing the quantity of milk to be given to children of different ages and at what intervals they should be fed. The table of quantity and of frequency is as follows:

1 part water, 2 parts milk	1st week	30	grammes	every	2 hours.
	2nd ,, ...	45	,,	,,	2 ,,
	3rd ,, ...	60	,,	,,	2 ,,
1 part water, 3 parts milk	4th ,, . . .	75	,,	,,	2 ,,
	2nd month .	75 to 100	,,	,,	2½ ,,
Pure milk .	3rd ,, . . .	120	,,	,,	3 ,,
	4th, 5th, and 6th month .	135 to 160	,,	,,	3 ,,
	7th to 12th month . .	180 to 200	,,	,,	3 ,,

It was as a result of the excellent research work of Morgan Rotch, of Fleischman, and others, and of my own long experience, that I adopted these quantities definitely. The scale has been calculated in accordance with the variations of the physiological normal capacity of exclusively breast-fed sucklings. The children were weighed both before and after each feeding, the aggregate weight of the milk taken in twenty-four hours was found, and this quantity was divided by the number of times the child was given suck, the result being the capacity of the stomach.

These investigations, patiently followed during weeks, months, and sometimes during a whole year, yielded positive data which could be applied to bottle-fed children. Leaning upon theoretic research and under the fear of overfeeding, M. Maurel, of Toulouse, has suggested as sufficient daily sustenance 100 grammes of milk per kilogramme of the child's weight. This would be 500 grammes for an infant weighing 5 kilos. This quantity is much smaller than that proposed by Heubner, Escherich, and others, and I believe that for an infant weighing from 5 to 6 kilos it ought to be increased by at least 100 grammes per day. While overfeeding should be avoided, it is as imperative that a sufficiency should be given lest proper development be retarded.

But it is principally in atrophic cases that we recognise the mistake of parsimonious feeding and the need for ganging the milk supply more liberally. It has been established that for prematurely-born children the quantities of milk required for calorification and assimilation are large in proportion to the weight of the children. A weakling weighing 1500 grammes consumes with advantage from 300 to 400 grammes of mother's milk. In the case of atrophics also it is often astonishing what quantities of milk are found necessary to secure regular increase in weight.

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* "Study on the Calorimetry of Atrophic Infants," 'Thèse de Paris,' 1904.

But before a detailed study of feeding in special circumstances let us glance at the different clinical varieties of infantile atrophy. There are breast-fed atrophics, far less numerous indeed than those who have been nourished on the bottle, but they must be known, that proper steps may be taken when maternal feeding is unsuccessful. M. Jégourel in his work on ponderal atrophy of gastro-intestinal origin in breast sucklings has been successful in showing certain conditions in the breasts of mothers making them unfit to suckle their infants properly. Here are his principal conclusions: "There is a certain class of breast-fed infants who do not prosper on account of the insufficiency of the mother's milk. It is atrophy by inanition." We have often remarked that the inanition of nurslings is not rare when the mothers give the breast on one side only. It is not then the fault of the quality of the milk, it is the fault of the quantity. "Overfeeding and irregularity in giving suck may produce dyspeptic troubles of which atrophy is the consequence. Sometimes milk too rich in butter or in casein seems to disturb nutrition and to impede development. Milk may become toxic and hurtful to the child by reason of different maladies or intoxication in the mother."

Atrophy in breast nurslings results much less frequently in organic defects or in the malperformance of the digestive functions, the congenital structure of the pylorus, pyloric spasms, and other troubles. For one atrophic infant at the breast there are twenty reared on the bottle. In this class also we find a small number of underfed infants confided to the care of negligent and unnatural nurses, who do not give food to their charges as often as they should. Such miserable children are excessively thin, have shrunken bellies, seize the teat greedily, and empty the bottle with hungry avidity. They are frequently afflicted with gastro-enteritis like the starved animals in the experiences of Chossat.

But more often atrophics are *overfed*, reared upon the cheap milk so widely sold, and it is difficult to know whether to attribute their digestive troubles to the bad quality or to the excessive quantity of the milk consumed. The stools are at first frequent and more or less liquid; vomiting, sometimes of extreme violence, supervenes; the abdomen shows great development, swollen like that of Batrachians, soft to the touch, the limbs are thin, and the face emaciated. Cases of this type are extremely common among children reared by ignorant mothers, as well as among those sent out to be nursed or lodged in infant homes, where they are given fermented or adulterated milk in excessive quantity and at badly considered intervals. The subsequent intoxication is more important than overfeeding as a cause of gastro-enteritis and of ultimate atrophy.

There is a class of atrophics who might properly be described as *surcharged* rather than as *overfed*. Fearing to give them too strong milk, the mothers add two thirds or at least one half water. If one remembers that dairy milk is often watered when sold, we find that in many cases newly-born children are given a quantity of liquid which during twenty-four hours exceeds one litre, and sometimes a litre and a half or even more. These overcharges are the great causes of vomiting. The stomach, distended by the excessive quantities of liquid introduced, rebels, and a severe diet is then necessary to calm the gastric irritability. Genuine overfeeding produced by the abuse of good sterilised milk causes disorders, the symptoms of which resemble somewhat those shown in infants with stomachs simply overcharged or given to overfeeding at the breast of a nurse whose milk supply is over-abundant.

Ponderal atrophy may arise from such forms of excessive feeding, as well as from inanition caused by serious underfeeding.

We see also infants of from 5 to 8 months who have been brought back from the country where they were put out to nurse, with bellies hard and tight as a drum, with thin limbs, with traces of epiphysic rickets, and an unclosed fontanel. These are the victims from the country, stuffed with paps, soups, potatoes, milk puddings, and other improper diet. They indeed drink milk, but their little systems are seriously deranged. Their weight marks time during one, two, or three months. They acquire with difficulty the power to draw physiological advantage from sterilised milk to resume the normal ability to assimilate proper nourishment and to develop in growth as they ought. Yet in spite of all these difficulties we have succeeded in rearing successfully a good number of these little patients by simply giving them the milk which had probably been withheld from them.

I shall merely mention *en passant* the athrepsics of the type which Parrot has described so well in his excellent work upon athrepsy. They exhibit a greater interest for the anatomo-pathologist than for the clinical specialist, because a morbid syndrome of such acuteness is generally incurable, no matter what medical treatment may be adopted or what milk given. I have stated that the limit of curability of atrophic nurslings by sterilised milk was reached when their weight is less than half the normal, from the ages of 3 to 8 months. They have then monkey-like wrinkled faces, a distended abdomen, very thin limbs, skin in plies too large for the underlying tissues. They often present signs of palatal ulceration, erosive erythema in the buttocks, and other skin troubles. This state indicates chronic and irreparable injury to the digestive tube and the surrounding glands. In giving to these athrepsics considerable quantities of milk—for they are very greedy—they seem to vegetate for some months, but they are as if mummified, and their weight does not improve. They subsist, but they cannot assimilate. The essential function of growth is arrested and cannot be re-awakened. A few of these cases may with difficulty be saved, especially if they have passed 6 or 8 months, but success is infrequent and in spite of all my efforts I have again failed this year in my attempts to rescue athrepsics in the crèche of the Hospital of Enfants-Malades, as well as in the Goutte de Lait at Belleville.

In severe forms of infantile atrophy the feeding-bottle is generally the cause, but ought not to carry the whole blame. There is an enormous difference between the results obtained by mothers themselves giving the bottle charged with good milk and those which follow rearing by mercenary nurses to whose care the children may have been committed. The ignorance, carelessness, and laziness of such nurses constitute the chief cause of mortality among artificially reared children.

I have found in Breton villages that the mortality among infants raised on the bottle by their mothers did not exceed 12 to 15 per cent. during the first year of life, while according to the accoucheurs, the death-rate among bottle-fed infants sent out to nurse reached and passed 30 per cent. during the first year. I only touch this important subject because I propose to go into it more fully at another time.

It is then established that the mercenary nurse plays a nefarious *rôle* in artificial feeding and is often to blame for atrophy of gastro-intestinal origin. We have in mind only atrophy of this last-named variety. There are, indeed, many other factors which arrest the growth of nurslings, faults hereditary or acquired, tuberculosis, syphilis, organic defects, congenital debility, and other disorders. Another form of atrophy has also been noted, *atrophia primitiva* as it has been called, independent of heredity of organic defects and of antecedent gastro-enteritis. This arises from trouble essential to the process of assimilation which has been impeded by want of assimilating ferments. In the large number of nurslings which have passed through my hands I have never found this inherent atrophy, and I have come to consider it a theoretic supposition only.

We are able to observe the prolongation of the atrophic syndrome in the second year and even up to three years old. We frequently find nurslings of fifteen to eighteen months whose weight does not exceed 5 to 6 kilos. Very recently I presented a pronounced case of this sort to the Society of Pediatrics, a little girl, aged 3 years, weighing only 100 grammes over 6½ kilos. I proposed to designate such extreme backwardness of tissue and organ development by the name "prolonged infantile atrophy," or "infantile hypertrophy." One has always to report gastro-intestinal troubles, defective alimentation, as the origin of this hypertrophy in the second year. Sometimes the development of atrophy is simple and uncomplicated, sometimes it is associated with rickety alterations in the bones more or less pronounced. In hypertrophy with the size and weight more or less stunted, I am assured after many radiographic examinations that ossification is much lessened, the tissue of the diaphysis is more spongy than in normal infants of the same age, and especially the points of epiphysic ossification do not become apparent for six months or even a year after the time when they show themselves in other cases.

After this necessary review of the divers clinical types of atrophy, let us see what rules ought to govern dietary in the respective circumstances and wherein these rules differ from those followed for normally healthy children. Milk always constitutes the foundation of this alimentation, and should be given to the exclusion of every other food during the first eight months of life. To say that human milk is superior to any other for sustaining and strengthening atrophics is to utter a truism. I have sometimes seen children incapable of deriving advantage from good sterilised milk from the feeding-bottle increase in weight from 250 to 300 grammes per week after they had been put to the breast.

But a wet-nurse in large towns, and in Paris especially, is not within the reach of every purse. The wet-nurse industry, moreover, is fundamentally immoral and should not be encouraged. After our experience of more than ten years among thousands of children, I am happily assured that sterilised milk of good quality, carefully prepared and employed methodically suffices in the great majority of cases to cure atrophics. I have not been satisfied with the use of asses' milk in these circumstances. During the year 1904, in directing the crèche at l'Hôpital des Enfants Malades, I attempted to restore certain atrophics and also certain athrepsics by its aid, but without success. The milk of the ass, as is well known, is a thin milk which resembles human milk, but is much poorer in butter content. Perhaps this poverty of fixed constituent fails to meet the requirements of atrophics, who usually have need of strong nourishment as we shall see. The price of asses' milk is exceedingly high—five to six francs a litre in Paris. It is no more within the purchasing power of the working classes than is the wet-nurse. The same remark applies to modified milk, kephyr, peptonised milk, pancreatised milk, and several sorts of butter-milk. All these milks can be used only in exceptional cases. They have, under certain circumstances, incontestible value.

I consider that for the district of Paris the best nourishment of reasonable price for atrophics is sterilised milk. I have often stated the reasons for my preference for milk sterilised commercially at 108° C. (*i. e.* 226° F.) brought from Normandy to Paris in half-litre bottles. My belief in the nutritive value of such milk arises from an experience of twelve years, during which time there have been distributed under my direction in Belleville Goutte de Lait over 400,000 litres to 3000 children. Furthermore, the same opinion is held by other investigators who use similar milk commercially sterilised. In 1899 Ignard showed that infantile atrophy could be beneficially treated by the methodical employment of sterilised milk.*

I have shown formerly that this great progress in rearing atrophic nurslings upon the bottle has a great social advantage, since it tends to restrict the *rôle* of mercenary wet-nurses, and renders it unnecessary that mothers should send their infants to the country to be suckled at the breast.† It must not be forgotten that the question of suckling invades the province of domestic economy. It is absolutely necessary that the poor little children brought to our Gouttes de Lait should be relieved and restored by sterilised milk, if their lives are to be preserved. There is, alas! no other alternative. It will therefore be admitted that there is reason in my claim that the progress we have made in artificial suckling has a social consequence, since we are able to preserve a great number of lives which would otherwise have perished for want of money to engage the services of a wet-nurse.

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* "The Treatment of Infantile Atrophy by Sterilised Milk," 'Thèse de Paris,' 1899.

† "The Rearing of Atrophic Infants by the Methodical Use of Sterilised Milk," 'Revue Scientifique,' 1902.

It is not in Belleville only that we have succeeded in rearing atrophics upon sterilised milk. Of M. Dupont in his Goutte de Lait at Fécamp, M. Raoul Brunon in Rouen, M. Raimondi and M. Carel in their consultations in Paris a complete success has to be recorded. The accurately gauged results which these workers can show are as encouraging as my own.

Doubtless a good number of the children who are brought to us suffering from gastro-enteritis appear to hesitate before resuming their normal growth. Their weight may show no increase for weeks or even months after the adoption of the sterilised milk treatment, but if they receive good milk from the hands of their mother or a faithful nurse, the return of the proper performance of the functions of assimilation and of regular progressive weight increase may be awaited with confidence. It is necessary that the impaired digestive tube should be restored that the normal process of chymification may be resumed.

In the crèche of our children's hospitals under existing conditions of administration one does not find similar results. The greater number of atrophics taken there decrease instead of increase in weight. There ought to be special establishments for the hospital treatment of nurslings under a capable, devoted, and sufficiently large attendant staff. Nothing is more difficult and thankless than the constant care of infants, giving them the bottle at the proper time, and otherwise paying the attentions essential to successful rearing.

In spite of persistent efforts I have this year been unable to obtain from the administration of the Assistance Publique in Paris more than a very partial reform in the service of the crèche at the Hôpital des Enfants Malades when it was handed over to my care in the rotation of appointment. Perhaps my successor may be able to complete what I have commenced, and establish a Goutte de Lait, a necessary department in such an institution. It is thus not from nurslings under existing hospital treatment that the complex problems of suckling can be solved. The weekly consultations in our gouttes de lait must be followed. In Belleville, for instance, may be seen and seen again during months and even years hundreds of nurslings whom we weigh and inspect regularly, and one may thus judge from the evidence of his senses the happy effects of milk sterilised at 108° C. Can one make a better reply to those who question the nutritive value of this milk than by producing a good number of infants who formerly suffered, whose development was retarded by attacks of gastro-enteritis, and who resumed the course of their growth upon this superheated milk ?

But to rear children it is necessary to have more than merely good milk. It must be properly administered in proper doses, and here again the regulation of quantity exacts greater attention and more careful precautions for atrophics than for normally healthy children. The rules for the scaling of doses for the latter are easily estimated, as we have already seen, but for atrophic cases there is diversity of requirements, which we must admit without determining the causes.*

M. Saint-Albin, in his study upon the calorimetry of atrophic infants, has established that of 33 nurslings, of which he calculated the calorification eleven were *hyperradiant*, sixteen were *hyporadiant*, and the remaining six showed normal calorification, or, in other words, possessed a calorification approximate to that of healthy infants of the same weight. "It is impossible," says this author, "from a clinical point of view alone, to determine anything regarding the thermogenesis of atrophic infants. There is no destruction made *à priori* between those exhibiting excessive calorification and those below the average." These observations, made by means of MM. Richet and Langlois' calorimeter, are a sufficient evidence of the difficulties which we experience in attempting to determine the individual allowance for each atrophic child. It is very certain that the hyperradiant infant requires a stronger dietary than one that is hyporadiant; but as calorimetric investigation is not yet a clinical process, we are denied a source of information, which would, no doubt, be very instructive.

Seven years ago, when I noticed that the bottle graduated according to age which I had had made to indicate the meals of normal children did not apply to atrophics, I had the idea of another bottle graduated according to weight, guided by the apparently logical principle that the quantity of nourishment ought to be gauged by weight and not by age. In actual practice I was not long in discovering that such a bottle would not be of the service I had anticipated. For some atrophics the inscribed allowance would be too small, for others too much, and for certain others correct. The researches of M. Saint-Albin in demonstrating that the number of calorific radiations in the atrophic child may vary from 3000 to 5000, all other things being equal, have enabled us to see the error in our initial reasoning. I have therefore been obliged to abandon the idea of a bottle graduated by weight, and I have renounced systematic graduation in the artificial feeding of atrophic children.

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* Regarding the quantity of water which should be added to milk, the rules which apply to normal infants should be followed for atrophics—one third and then a quarter of boiled water during the first two months of life. In the third and fourth months pure milk is generally well tolerated. It is advisable to add to it a small quantity of ordinary sugar in order to raise the proportion of ternary principles reduced by the addition of water.

It is only by tentative research that we must proceed, investigating the tolerance of the stomach and of the intestines, judging the nourishing value of the milk by carefully and systematically weighing the child, and by following growth step by step. The suckle given should not provoke gastro-intestinal reaction, and should cause as little as possible of vomiting and diarrhœa. During the initial periods of weight stagnation the tolerance of the digestive tube for the milk is the sole guide because the scales simply indicate that weight is stationary.

Later, when the process of assimilation has been re-established, the size of the meal may be increased more or less rapidly as the weekly gain in weight is small or great. The weighing machine becomes the veritable helm by which suckling is guided. Although all the atrophics are not *hyperradiant*—many being deficient—it has appeared to us that the major part of them accommodate themselves to a rather strong dietary. In this they resemble the prematurely born, who consume great quantities of milk, which they probably assimilate badly on account of the functional debility of their digestive organs, as we have noticed above.

Atrophics have generally dilated stomachs, gastro-enteric troubles, sometimes of long standing and more or less severe. The secretions of the digestive glands are certainly deranged, as well as the absorption of the chyme. It is thus natural that somewhat stronger nourishment should be necessary, since only a portion of that taken is used physiologically. We have often noted cases of severe atrophy where the weekly weight increase was obtained only by very strong doses of milk, which could not have been taken by normal children of the same weight. I do not advocate overfeeding as a positive treatment for atrophics, but it has very often seemed to me to be demanded.

The conclusion is that there is no absolute rule for determining the rations in atrophic cases. The study of calorification gives no thoroughly reliable indication of the needs of the individual case. Experience must guide to a knowledge of the limits of gastro-intestinal tolerance, and at a later stage the weighing machine is the best guide.

The curve of growth naturally varies according to the degree of atrophy. In athrepsics—those whose weight is not more than half the normal for their age—the curve is practically a horizontal line for one or several months, with a tendency to decline. It becomes a descending curve, of which the habitual end is death. In atrophics

—with acute atrophy which has reduced their weight to two thirds or three quarters of the normal at the age of four to five months—the curve is on the up grade. The daily weight increase is satisfactory, but the curve remains below the normal for a long time, and these children do not begin to walk until the eighteenth or twentieth month, instead of at the twelfth or fourteenth. They have simply lost four, five, or six months of growth.

When the degree of atrophy is only slight, we often find that the infants regain the normal ascending curve and become quite vigorous in their second year. More frequently it is only in the third year that atrophics quite make up their lost growth and resemble other children in size and figure. There are some, however, who even in the third year are under proper weight and size—weighing, for instance, from eight to ten kilos. and measuring from ten to fifteen centimetres less than normal size.

The term "prolonged infantile atrophy," or, better still, "infantile hypertrophy," is indispensable for the designation of this singular clinical type, which suggests nanism, but which is essentially different, as it is only temporary. Hypertrophic children have sometimes a weekly weight increase of from 150 to 250 grammes during the second or even the third year. It is not, then, surprising that they require stronger nourishment than normal children of the same weight. They are in general great eaters, but they only assimilate part of the food they consume.

During the last two years I have had reared under my observation a hypertrophic child, who weighed 4 kilos. 700 grammes at the age of 18 months, and I communicated its history and its curve of growth to the Society of Pediatrics in 1904. It received each day about a litre of milk (which had been superheated to 108° C.), either pure or in soup, with mashed potatoes, one or two eggs, and meat-juice. At first it had the belly distended and hard, the liver expanding the sides by three fingers' breadth, with an apparent dilatation of the subcutaneous abdominal veins. Its stomach supported well this somewhat excessive food allowance. Its stools were stiff, voluminous, and of a greyish mastic colour. It was only after five or six months of treatment that its stools became somewhat normal, but weight increase had commenced well before this. In utilising even incompletely the food swallowed the hypertrophic increases in weight, and the process of assimilation becomes effective before the digestive functions attain complete regularity. This child probably had gastro-enteric troubles of long standing, since he weighed only, I repeat, 4 kilos. 700 grammes at the age of 18 months, instead of the normal of 10 to 11 kilos. In spite of contagion risks inevitable in a children's hospital, measles, whooping-cough, etc., this hypertrophic child finished by being successfully reared in our Damaschino ward, and we handed it back to its mother when three and a half years, able to walk well, without rickety deformity in the limbs or in the thorax, reasonably intelligent, and with a weight and stature little under normal. We had to give two years of care and tending to effect this cure.

Finally, in infantile hypertrophy, as in infantile atrophy of the very young, we believe that the alimentation should generally be increased, and with this statement we conclude this study of the subject.

VERRUCOSE ENDOCARDITIS OF THE AORTIC VALVES AND AORTA.*

By Edmund Cautley, M.A., M.D.Cantab., F.R.C.P.,

Physician to the Belgrave Hospital for Children.

Infective endocarditis is by no means common in young children, and it is still more rare to find the peculiar chronic verrucose condition which was present in this instance. The case was that of a boy, aged 8 years, who was admitted into the Belgrave Hospital for Children for supposed meningitis on March the 6th, and died on March the 17th, 1905. The family history contained no facts of importance, and his past history was excellent, except for the suggestive point that he had been in St. Thomas' Hospital some years previous for "weak heart."

Three weeks before admission he received a blow on the right eye through a fall on a bench at school. He was taken home and put to bed for a few days, then he was allowed up, but during the last ten days he had been again confined to his bed. The symptoms, since the injury, consisted of constant vomiting, anorexia, constipation, variable headache in the right frontal region, vague pains in the chest and abdomen, and fever. Two days ago the temperature reached 103·6° F. There was no delirium. On admission he was conscious, drowsy, and rather irritable. There was a little duskiness of the nose and lips, but no clubbing of the extremities. The apex of the heart was in the fifth space, nipple line, the impulse rather exaggerated, and the dulness a little increased. A loud systolic murmur was heard all over, loudest at the base, with its point of maximum intensity in the second left interspace near the sternum. It was conducted into the neck on both sides, into the axilla, and heard in both interscapular regions. The pulse was of fair volume, about 100 per minute. A blood-count yielded 5,800,000 red cells and 8500 white cells. There was no abdominal distension. The liver and spleen were palpable and the splenic dulness enlarged.

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* Exhibited before The Society for the Study of Disease in Children, April the 14th, 1905.

March the 7th.—Good night, still irritable, more drowsy. Occasional headache. No delirium. Anorexia, no vomiting, normal stools. The knee-jerks were absent and Babinski's reflex was present.

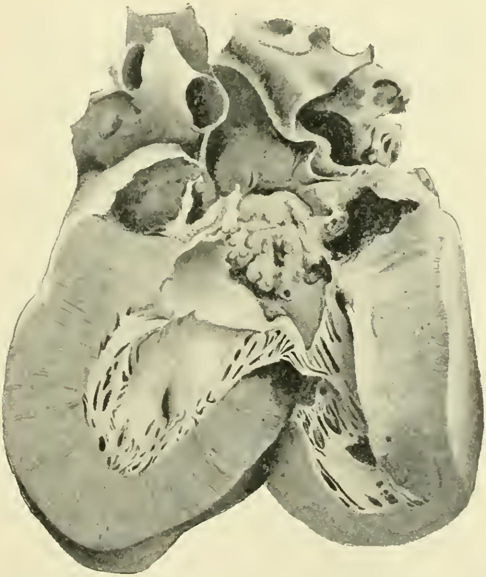
March the 10th.—The temperature has ranged between 100·6° F. and 105·8° F., being very irregular in character. Pulse 120, rather small. Has vomited twice in the last day.

March the 14th.—The temperature maintains its irregularity and has been up to 104·6° F. The murmur is now definitely loudest in the aortic region. The spleen is larger. A blood-count yielded 12,000 white cells.

March the 17th.—For two days there has been frequent vomiting. Last night patient became very excitable, but this morning he collapsed, turning a very bad colour. Two hours later he became unconscious, and he died in a state of coma in another two hours.

The diagnosis of this case was peculiarly difficult on account of the very definite relationship of the onset of the illness to injury. It was, however, perfectly clear that there was more than a meningitis, even if there was any meningeal affection at all. There were no signs sufficiently definite to suggest typhoid fever. The presence of a basal cardiac murmur might have been only a coincidence, but in view of the character of the fever, the enlargement of the spleen, and the absence of marked meningeal symptoms I regarded the case as one of infective endocarditis, secondary to a valvular lesion which was probably congenital. The distribution of the murmur at first suggested a pulmonary stenosis, but there were none of the physical signs usually present in this affection. Later, the distribution of the murmur and the evidence of hypertrophy of the left ventricle indicated an aortic affection, a comparatively rare form of valvular disease in children as a single lesion.

On post-mortem examination an excess of fluid was found in the cerebrospinal canal. In the pia-arachnoid, scattered over the cortex and base of the brain, were a few small isolated plaques of thin purulent lymph. The pericardium was distended with recent effusion of serum and blood. The heart was larger than normal, the enlargement being due to hypertrophy of the left ventricle, and moderate dilatation of the left auricle. In the base of the wall of the left ventricle there was a recent infarct, the size of a small walnut, containing very soft blood-clot, commencing to break down. The aortic valves were converted into irregular warty masses, showing no trace of the original valve structure, the warty structure being very firm in texture. Above the valves the aorta was considerably dilated, and contained a large, flat, circular patch, about the size of a shilling, of inflammatory tissue, and looking like a large sessile wart. The hæmorrhage into the pericardium had taken place through the thinned wall of the aorta. The spleen was enlarged, and contained a recent infarct. All the other organs were normal.



It is doubtful what was the cause of the primary affection of the aortic valves. From the fact that only these valves were affected, and that there was neither a family nor a past history of rheumatic affections, and that there was a past history of "arch heart," I am inclined to the view that the mischief was congenital in origin. That congenital aortic stenosis can occur is recognised. Two such cases have come under my notice, one of which I showed at a meeting of the Medical Society of London in 1899 and the other before the Society for the Study of Disease in Children ('Reports Soc. Dis. Children,' vol. i). Fisher also showed a specimen of the lesion before the Society for the Study of Disease in Children ('Reports,' vol. ii, p. 16). Friedmann reported a case in which the murmur was heard at the age of 4 months.

Infective endocarditis of the aortic valves is naturally most uncommon; for infective endocarditis is uncommon, and that the aortic valves alone should be affected is still more rare. Usually when it occurs it is a secondary affection of the mitral valves. In one case under my care the child had pulmonary stenosis and regurgitation, with secondary infection. Her age was 15 years.

TWO CASES OF MONGOLIAN IMBECILITY.*

By Hugh Milton Stewart, M.A., M.D.Cantab.,
Assistant Physician, Home for Sick Children, Sydenham.

During the past week I have met with two cases of Mongolian imbecility, and though these cases are not rare yet I think in general practice they are sufficiently uncommon to make it of interest to exhibit the patients and to give a short account of their condition.

The most characteristic feature is the facies. The eyes, or more correctly the palpebral fissures, slope downwards and inwards towards the nose, giving the appearance which is normal in Mongolian races (Fig. 1). The face tends to be chubby, with a snub nose and depressed bridge. A squint is present in both my patients, but no nystagmus. A characteristic bright ruddy colour is present in the elder of the two children. The tongues in my patients are neither protruded nor broad, and the fungiform papillæ are not enlarged. The head of the younger child, who is aged 13 months, has a circumference of seventeen inches compared with a normal of eighteen, while the older child's head measures 16½ ins., the normal being 18·4 ins. It will be readily noticed that the diminution in size is mostly in the antero-posterior diameter, and there is a marked absence of the occipital protuberance, so that the rounded appearance of the back of the head is lost (Fig. 2). In extreme cases the occiput is almost in a straight line with the neck. The younger of the two children weighs now at 13 months 26¼ lbs. and is said to have recently lost weight; my patients are both of average height.

The hands are short, and the thumb is specially short relatively to the fingers, which are tapering and rounded at the tip—not broad as in cretins. Considerable stress has been laid on a curving of the little finger towards the ring finger, but this is not present in either of the patients, and it is not probably a point of any diagnostic importance. The skin is smooth and white, and the hair normal in amount, though it perhaps tends to be straight and lank. With regard to the general condition, the circulation is weak, so that it is difficult to keep these children warm. In the younger of the patients, the hands and feet were for a time distinctly cyanosed. There is no evidence of congenital heart disease in either patient, but some observers have found that Mongols are very apt to have congenital defects of the heart. Out of eighteen of Hutchison's cases, there was a definite lesion in five.

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* Read before the Sydenham District Medical Society, March the 16th, 1905.

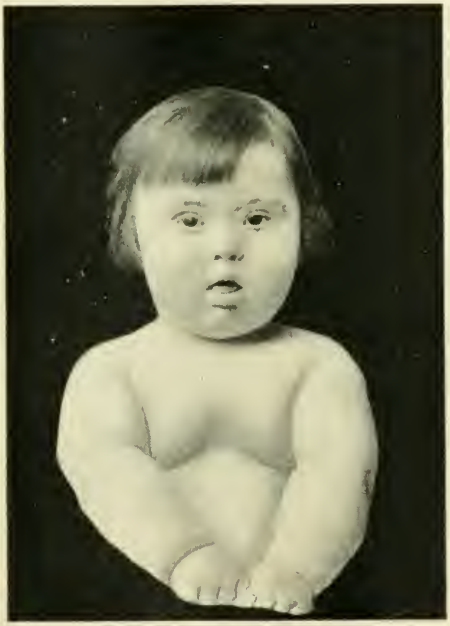

FIG. 1.—Mongolian idiot aged 19 months.

Many Mongols make a sort of snuffling in breathing, and they also frequently and voluntarily make a crowing noise which appears to be indicative of pleasure. The snuffling may be due to the smallness of the naso-pharynx, owing to the shortening of the base of the skull, and also to the chronic catarrhal condition of the nasal passages to which they are liable, but in one case Still found that the vomer projected far back into the naso-pharynx, and the same condition has been noticed by other observers. In the younger of my patients this snuffling is very marked, though there is not any real nasal obstruction, and the child sleeps with its mouth shut. A practical point to bear in mind is that these children stand operations badly, so that it is not advisable to attempt to clear out the naso-pharynx, even if some excess of adenoid tissue be present.

In Mongols dentition is late and often irregular; thus the child of 13 months has one tooth, and the child of 19 months has only two, and they are both molars. The older child did not sit up till eight months old, and now can only stand by the aid of a chair; the younger child makes no attempt to sit up or even roll over, but if placed in the sitting position will maintain it for some time. The degree of delay in talking varies in proportion to the defect in the brain development. The 19 months old baby, according to the parents, showed signs of talking at a year, but has made no progress since, and now can only make sounds like "dada"; the younger child also makes sounds, which are interpreted by the parents as "dada" and "mamma."

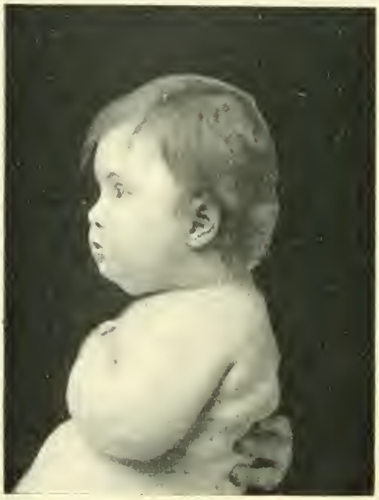

Fig. 2.—Mongolian idiot aged 13 months.

The mental condition is one of imbecility of a variable degree; Mongols soon learn to distinguish their parents; they may be apathetic like the younger of these babies or vivacious like the older, but they are generally good-tempered. The higher grades of Mongols can be taught to be clean quite early, and both these children can and do indicate when they desire to defæcate.

The morbid anatomy shows little to account for the condition beyond a general smallness of the brain.

With regard to the ætiology, several factors may take a part, but the most suggestive observation is that these children are generally born towards the end of the reproductive period. Shuttleworth, in a discussion on the subject at the Society for the Study of Disease in Children in 1900, stated that about 40 per cent. of Mongols were the latest members of large families. In my cases the elder child is the youngest of seven, the age of the mother being 42 years; the other case is the second child, but the mother is aged 40 years, and was subject during pregnancy to another possible cause of the defect, namely, excessive worry owing to the intemperance of the father. It is indeed reasonable to suppose that any cause which exhausts the mother—or father—may lead to a Mongolian offspring; for instance, phthisis is frequently found in the family history, and alcoholism, syphilis, and insane heredity may each and all take a part in the causation, though they do not appear to have so direct an effect as in other types of mental defect. The diagnosis of a typical case is not difficult, the conditions which are most likely to be confused with it being cretinism and congenital syphilis. The features separating them from cretins are, briefly, the facies, the shape of the head—brachycephalic in Mongols, dolichocephalic in cretins—the skin, the hair, and the hands. With regard to syphilis, though the depressed bridge of the nose and the snuffling might suggest this disease, the absence of other symptoms of syphilis with the Mongolian facies and imbecility should be sufficient to differentiate them.

With regard to prognosis, both body and mind must be considered. In addition to the liability to congenital disease of the heart already mentioned, Mongols are very liable to respiratory disease—bronchitis, broncho-pneumonia, and especially phthisis; while in a certain proportion of cases epilepsy develops as a further complication, so that it is exceptional for them to reach adult life. They can be trained to a considerable extent, and in the higher grades will develop fair imitative capacity, but their reasoning powers always remain below the normal. As to medicinal treatment there is no drug which is known to affect the condition; thyroid gland has been extensively tried, but on the whole there is a consensus of opinion that it is only of use in reducing excessive fat where this tends to occur. In spite, however, of the fact that these patients can in no sense be cured, it is important to recognise the condition—and this is possible at a very early age—not only on account of what can be done in the way of training and guarding against the special dangers to which they are liable, but quite as much in order to realise the strictly limited degree of mental development they will acquire.

A CASE OF CONGENITAL DEFORMITY OF THE HANDS; MANY MEMBERS OF THE FAMILY SHOW SIMILAR AND OTHER MALFORMATIONS OF THE HANDS.*

By George Carpenter, M.D.Lond.

The male infant exhibited, aged 3 months, shows truncation of both little fingers with absence of nails, and a skiagram reveals absence of the terminal phalanges. The end of the ring finger of the right hand, which is shortened and but slightly longer than the little finger, is much broadened laterally.

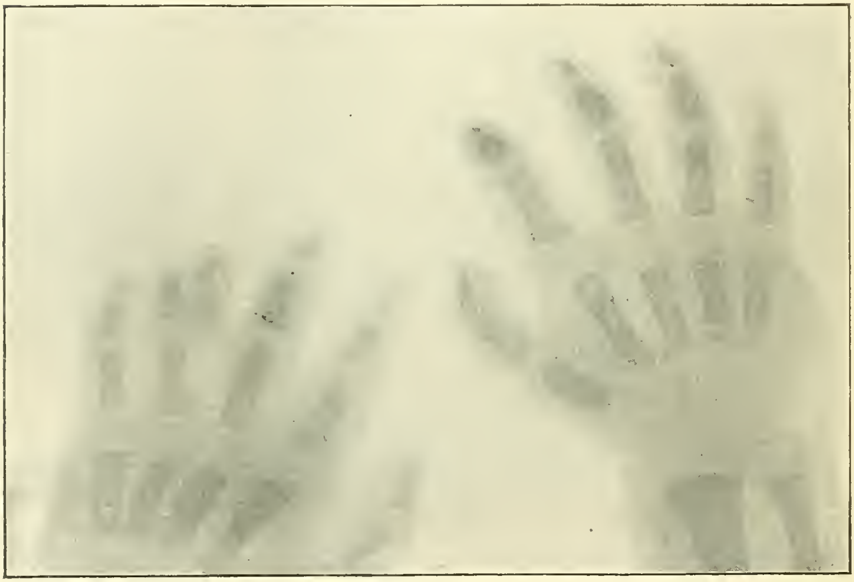

Fig. 1.

A skiagram shows a badly-formed middle phalanx, and the terminal phalanx has apparently toppled over and is affixed to the side of the digit. A small bone, the origin of which is not quite clear, is seen to one side of the middle phalanx (*vide* Fig. 1). The nail of the left ring toe is absent, and that of the right is rudimentary. The nails of both little toes are rudimentary. The infant, which is the youngest of six, is the only male child. The infant's two youngest sisters have truncated little fingers (*vide* Fig. 2, a skiagram of the left hand of one of these children; a skiagram of the hand of the other child showed a similar deformity).

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* Exhibited before the Society for the Study of Disease in Children, May the 5th, 1905.

The origin of the deformities appears to be in the mother's family on her father's side. The child's mother is the youngest of seven. Her little fingers are truncated and incurved, and there are no nails upon them. The skiagram shows rudimentary terminal phalanges (*vide* Fig. 3). The index fingers are the longest, and the metacarpal bones of the middle and ring fingers on each hand are shortened considerably, being but half the size of the index phalanges. The phalanges of these are correspondently long.

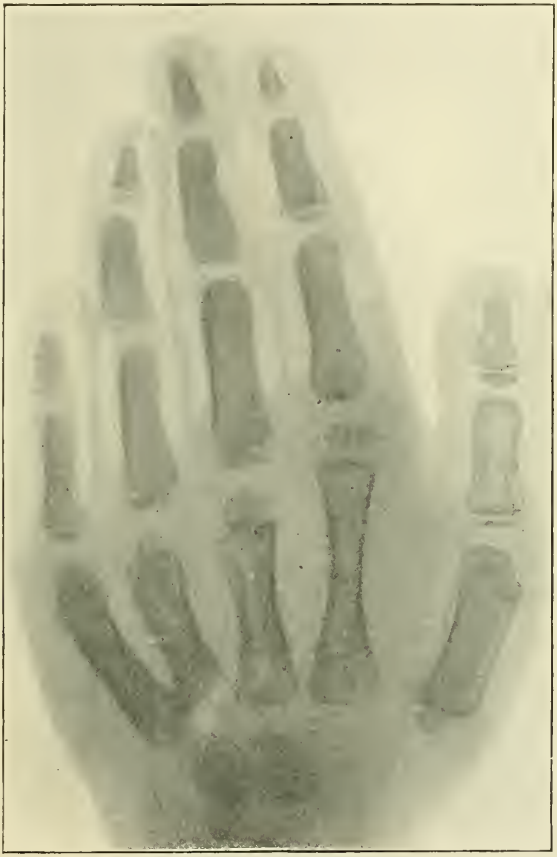

FIG. 2.

The mother's eldest sister and youngest brother have shortened incurved little fingers with no nails upon them. Of the eldest sister's children one has two nails on one finger and webbed fingers, and two are deficient in finger nails. Two of the youngest brother's children have deformities of the little fingers of both hands. The mother's father had two thumbs on each hand, and the mother's uncle had webbed fingers of both hands. The skiagrams were taken by Mr. H. J. M. D. Sale-Barker.

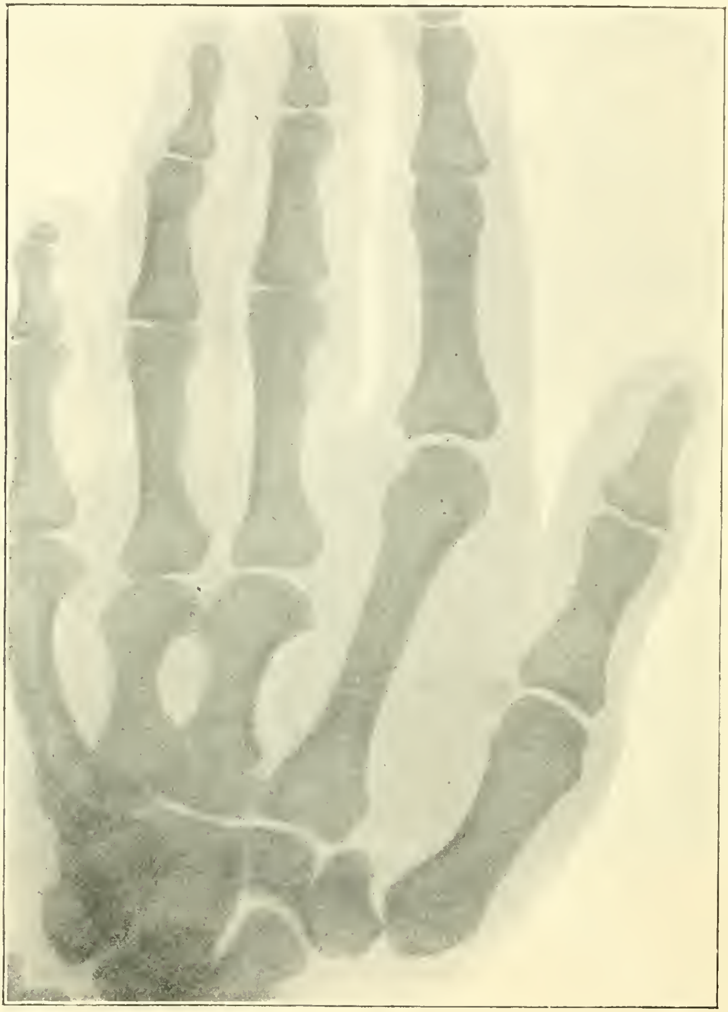

Fig. 3.

Editorials.

SHEFFIELD'S OPPORTUNITY: THE NEW UNIVERSITY AND THE FORMATION OF A CHAIR OF CHILDREN'S DISEASES.

The Council of University College, Sheffield, are appealing to the public, through the local press, for donations in aid of the University of Sheffield, which is to be opened by His Majesty the King during this month, and it is to be hoped that the public will generously respond.

It is stated that another £50,000 is required to render the University free to use its full influence; and high and low, rich and poor, hand-workers and brain-workers, in Sheffield—all classes are wanted and invited to join in the movement.

But something more than donations is called for to render this latest University of benefit to the human race and a pioneer in a much-needed and sorely-neglected movement. In the new University not the least important faculty will be that of medicine—the healing art in all its branches.

In the twentieth century it will scarcely be credited by the uninitiated that a student can obtain the highest medical degrees and diplomas without having been either taught or examined in children's ailments.

As in other things, so in pediatrics, England is behind its continental rivals and American cousins in this most important study, though there have been of late indications that the country is waking up to its responsibilities to its young.

The medical practitioner at the present day more often than not receives his diploma to practise his profession on hapless infants and young children without any pretence to knowledge in regard to their special ailments or requirements. In these days of over-pressure and frequent examinations, that which is not made compulsory in the medical schedule is not apt to attract much attention for the bulk of medical students, who are kept busy mastering the curriculum—not by any means ideal—which has been designed for their instruction by medical men whose knowledge of and interest in pediatrics is not profound. Nevertheless, the work of the family practitioner is largely made up of the ailments incidental to women and children.

The importance of the study of the diseases of women has long been recognised, and medical students are rightly taught and examined in midwifery and gynæcology before obtaining their diplomas.

For a long time it has been customary to join together in the medical curriculum the diseases of women and children—totally different branches of study; and under this baneful system, presided over by the gynæcologist, the students have not been taught pediatrics, knowledge in this branch of study has been lost, apathy has reigned in the minds of professor and pupil, and the care of our infantile population has been relegated to the proprietary food monger, to sundry other quacks, and to Nature, either to suffer, to recover in spite of disabilities, to be maimed for life, or to die.

Is it to be wondered at, under these circumstances, in the presence of years of neglect and want of proper professional guidance, that our infantile mortality rate is so high, and that our national physique is steadily declining and with it much national vigour that we are dependent upon for the protection of our lives and liberties in the not very distant future? How can parents whose own physique has frequently suffered by reason of this neglect in infancy be expected to rear healthy children without competent guidance? And to whom should they look to for such guidance if it be not to their family doctors?

At present they obtain information of how to rear their children from the specious advertisements of the not uninterested proprietary food vendor, from popular medical literature of a not too well informed character engineered by the untrained and the unskilled, from pig-headed and ignorant gamps, and from a most stubborn source—that ridiculous creature the foolish mother, who deems herself to be a Heaven-inspired authority by reason of her maternity.

True, we have our numerous well-equipped, skilfully managed and ably staffed children's hospitals, which have accomplished and are performing a great public work, but these institutions do not reach the bulk of medical students and practitioners under existing conditions. To accomplish that the study of children's diseases in the future must be made compulsory, and the candidate for degrees and diplomas must be taught by and examined by specialists in this branch of study if we are to maintain our place and prestige among the nations.

The Society for the Study of Disease in Children held its annual provincial meeting last month at the Sheffield Children's Hospital. The wealth of clinical material displayed there testifies to the necessity for this institution and to the good work which is being carried on by its medical staff for the relief of infantile Sheffield. The hearty co-operation of the medical members of the Infirmary and of the Children's Hospital in welcoming this important and rapidly growing British Society, testifies to the deep interest which is displayed by the leading medical authorities of Sheffield in what is a burning question of the hour—our children's welfare. It is not good in the interests of the University and for the propagation of knowledge that such facilities as the Sheffield Children's Hospital offers for the study and advancement of one of the most important branches of medicine should be closed to the medical student and be lost to an even greater public than that which the hospital serves.

The Children's Hospital authorities are urged to render the Sheffield medical student every facility for clinical study and for that purpose to join hands with the Infirmary.

Mr. Simeon Snell, at the annual provincial banquet of the Society for the Study of Disease in Children, at which Dr. C. N. Gwynne presided, entertained that Society and its guests with a lucid and most interesting address on the aims and objects of the Sheffield University. It is hoped, as was advocated by an official of that Society which has accomplished so much for the diffusion of knowledge of children's ailments and to relieve this country from its well-deserved opprobrium, that a Chair of children's diseases will be formed at the new University and that no candidate will obtain the degree of Bachelor of Medicine of Sheffield who has not rendered a good account of himself in this special branch of study and that the M.B. of Sheffield will be a guarantee to the world of the acquirement by its possessor of a practical knowledge of pediatrics.

It is hoped that the public press of Sheffield will prove as enthusiastic over the promotion of this novel but necessary feature as in the collection of funds for the furtherance of the complete scheme, and that it will strengthen the hands of the medical faculty so as to bring about this great work and initiate a pioneer movement. Sheffield's children and the thinking world are keenly interested, and it is expected that Sheffield will do its duty. Will some Sheffield philanthropist endow a Chair? It will be money well spent.

MODERN DIETETICS IN THE CAUSATION OF DISEASE.

The eruption of the teeth is a sign that a new era has commenced in an infant's life, and the failure of the medical profession and of the public generally to recognise this fact in connection with the dietary is the subject of an interesting volume from the pen of Dr. Sim Wallace.* He is convinced, like Dr. Harry Campbell, that many of the general and local diseases of childhood are due to the soft and "pappy" foods used after dentition has been established. His conclusions had better be given in his own language, which takes the form of "a most vigorous protest against the iniquitous and ubiquitous system of feeding children almost entirely on milk-soaked foods. Not because milk is occasionally the bearer of tubercle, scarlet fever, diphtheria, etc., nor because it leads to constipation, fermentation, and summer diarrhœa, but because this pap system is the insidious cause of lifelong suffering from the numerous derangements of the alimentary canal which it brings on. It begins by producing the wholesale ruin of the teeth, together with many consequent troubles. It leads to adenoids, and all the unfortunate sequelæ with which we are familiar. Finally it almost necessarily begets gastric insufficiency, mal-assimilation, and malnutrition, together with the general wreck of physical well-being which these derangements ultimately produce."

Let us consider first this question of "pappy" foods and soft diet generally after the eruption of the teeth. That the teeth are there for a purpose, biting and chewing, seems self-evident, and is fairly well recognised. It must be admitted, from the references given by the author to medical works on dietetics, that the fact is not universally recognised. Still, in spite of these blind leaders of the blind, we cannot but believe from practical experience that both medical men and mothers appreciate the importance to children of using their teeth on solid substances. Even if they fail in this primary duty, the child is apt to assert his opinion on the subject by transferring to his mouth and chewing everything that comes handy. "A crust of bread and liberty" are all he asks for, and Nature teaches him to do the rest in a manner which should satisfy even Dr. Sim Wallace. At the tables of the poor the young child is early introduced to articles which require chewing, and not infrequently this introduction takes place too soon, as shown by the violent choking attacks which ensue on his attempt to gulp down lumps of sausage, mutton, etc. While, then, we agree with the author as to the necessity for biting and chewing in the case of young children, we differ from him in his assumption that these functions are entirely neglected in the present day.

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* 'The Rôle of Modern Dietetics in the Causation of Disease,' by J. Sim Wallace, M.D., D.Sc., L.D.S. (London: Baillière, Tindall, & Cox, 1905).

On the subject of diet he goes a good deal further: "It should be distinctly recognised that milk is an extremely unnatural food for children over about the age of 2 years." Dr. Wallace is very strong on the subject of natural foods, but we fail utterly to see why cows' flesh should be held to be a more natural food than cows' milk. We can produce positive evidence that milk is a natural food, but we know of none showing that flesh is. The natural foods of prehistoric man may have been sufficient to live on, but we question whether this epoch was the golden age or the guide for the present-day dietary which Dr. Wallace fondly pictures it to be. The primitive races of to-day, such as the natives of India, may be quoted as natural feeders, and their children, with their rice-ballooned bellies and brief existence, do not represent our ideals of healthy childhood. While utterly condemning such foods as porridge, milk puddings, bread soaked in milk, etc., Dr. Wallace does not sketch out a very full dietary for the youthful masticator. From the theoretical views expressed we should assume that a dietary somewhat as follows would meet with his approval: apples, dry coarse bread (crusty), hard biscuits, lean beef and mutton (dry, tough, and preferably uncooked), raw vegetables, sugar-cane, and nuts. *Sit modus in rebus.* The average medical man and the average mother will hold the balance between the extremists, and the decision will be, that while porridge and puddings are valuable as part of the diet, there should also be a sufficiency of hard and tough material—biscuits, toast, fish, and mutton—for the child to use his teeth on.

As a dental surgeon, Dr. Sim Wallace has been struck by the prevalence of dental caries in children, a condition which he traces to the soft foods on which they have been fed. The existence of this evil we are not prepared to deny. Drifting along, guided by his imagination, he sees other terrible visions of "gastric insufficiency, mal-assimilation, and mal-nutrition, together with the general wreck of physical well-being which these derangements ultimately produce." All of these are to be traced to the use of soft and concentrated foods, and the disuse of the teeth. Is it not a Chinese proverb which says that men dig their graves with their teeth? The wisdom of the East must give way to the wisdom of the West, which declares that an even earlier grave may be reached without the use of the teeth. We cannot, however, accept the dietary of children in the present day which is outlined by the author as being at all representative of what is actually in common use. The advertisement columns of popular papers and magazines are not consulted by medical men on this subject, and the foolish mothers who believe in the alluring statements and the still more alluring pictures of bottled and tinned beef, bone, and beauty for their offspring are, after all, but a section of the public. We have failed to find in actual life those crowds of beef-tea and malted-food-reared children which exist in Dr. Wallace's imagination. The mere cost of those highly concentrated foods places them beyond the reach of most families as an ordinary diet, and the experience of all physicians is that their abuse takes place before, not after, dentition has been completed. We do not, therefore, disagree with Dr. Wallace in his condemnation of these foods as an ordinary diet, but we think he is condemning a custom which does not exist to any marked extent. When, carried away by the exuberance of a peroration in one of his lectures, he says that the question of a pappy diet "is probably the most important of all questions affecting the physical well-being of humanity throughout the length and breadth of the civilised world," we feel inclined to ask for some confirmatory evidence of this sweeping statement. If Dr. Wallace will extend his investigations from the study to the highways and byways of life, he will find that there are more chewing and less pap-feeding than are dreamt of in his philosophy. We seem to have noticed for some time a great effort on the part of Dr. Harry Campbell and Dr. Sim Wallace to educate the profession on the subject of the importance to children of mastication, and we believe that this subject has been and still is insufficiently considered in medical works and by medical men. We do not desire, however, that the value of their work should be diminished by exaggerated statements, or by ignoring the facts of every-day life.

Abstracts from Current Literature.

Medicine.

Abdominal pain in children ('*Rev. des Malad. de l'Enf.*,' May, 1905).—**Carrière** draws attention to these pains, which are at times due to cutaneous hyperæsthesia, in cases of typhoid fever, and in neurotic girls at the onset of menstruation. In small boys undergoing a course of gymnastics it may be traced to rheumatism of the muscular parietes; there is constant febrile disturbance, the integuments are not painful, but pinching the thickness of the parietal wall is extremely so, as also is the least movement. Lumbar abdominal neuralgia is not rare in children, the presence of painful spots, lumbar, iliac inguinal, sacral, and suprapubic, establish the diagnosis. Attention is drawn to the stitch in the abdomen in pneumonia of children, often suggestive of an appendicitis or perforation. Sometimes minute examination of the abdomen fails to discover anything—the possibility of latent Pott's disease should be borne in mind in these cases and the spine percussed. Besides pains due to peritonitis, congestion of liver, hepatic colic, movable kidney, and nephritis, ovarian pain is often met with in young girls. Primary or secondary tuberculosis of the mesenteric glands must also be borne in mind, which causes either continuous or paroxysmal pain. Luss has remarked, in the course of convalescence from diphtheria, the existence of violent abdominal pains, which he attributes to lesions of the vagus, and are premonitory of cardiac paralysis and of fatal import. Material enteralgia and lead colic are also observed, and enteralgia also in young boys and girls who are anæmic and constipated. In these cases it takes the form of dry colic without any relation to ingestion or digestion of food. The fæces should be examined for irritant material such as the horny covering of shrimps, etc. Intestinal worms also produce pains, but they are not severe, and are worse when the subject is fasting, hot drinks always giving relief. The pains due to the presence of toxæmia are exaggerated by the ingestion of acid, salt, aromatic or alliaceous substances, and quieted by oil, sugar, or milk. VINCENT DICKINSON.

Difficulties of micturition in childhood (*'Rev. des Malad. de l'Enf.,' May*, 1905).—**A. Mousseaux,** of Vittel, considers that many cases are due to hyperacidity and gravel, which in the bladder of the child, being much more sensitive than in the adult, produce an impression on the neck of the bladder sufficient to excite micturition before any distension of the organ takes place. In the new-born child the first urine secreted is charged with urates and uric acid, consequent upon the elimination of "uratic infarcts" in the kidney, and the first micturition may be delayed as long as two or three days without distension of the bladder, but with painful manifestations on the child's part. There is in these cases a painful spasm of the neck of the bladder, which renders micturition difficult and painful, and ceases as soon as the secretion becomes more copious. In nurslings the act of micturition is often accompanied by crying, and in these cases Comby has noted uric acid sand on the napkins. Under the age of 2 years vesical spasm has been rarely described; it is, however, incontestable that certain children suffer from dysuria without any vesical lesions during attacks of diarrhœa, of fever, and in all cases where there is diminution and concentration of the urine. The same phenomenon is observed in healthy infants where there is insufficient oxidation of the nitrogenous substances eliminated by the kidney, in those who eat largely and much meat. Such children often exhibit an urgent desire to pass urine, but at the last moment it is set aside owing to the pain felt. Many cases of incontinence come under this category; the desire to micturate is frequent and urgent, without, however, provoking spasms, and during the day the child often wets his clothes, and at night during deep sleep he passes urine in bed. In such cases an elimination of nitrogenous elements from the diet produces a marked improvement, and a complete cure may be effected by the waters of Contrexeville, Vittel, or Carlsbad. VINCENT DICKINSON.

Cerebral hemiplegia with hemiataxia (*'La Clin. Infant.,' March* 15, 1905).—**Bouchaud,** in the *Journ. des Sciences Méd. de Lille*, December, 1904, recalls the fact that, side by side with the common form of infantile spasmodic hemiplegia, hemiathetosic and hemichoreic forms have also been described. He now adds a hemiataxic form, based on his personal observations. In his patients, aged respectively 4 and 9 years, irregular, but well-marked oscillations occurred on voluntary movements. These were quite distinct from the rhythmic oscillations of disseminated sclerosis, but resembled the absolutely inco-ordinate movements of ataxia. It appears, then, to be an established fact that in infantile hemiplegia, after the subsidence of the paralysis, motor troubles may persist in the form of ataxia, as in certain adult hemiplegias. This striking pathological observation is not the first which has originated with Bouchaud, whose name is connected with pseudobulbar paralysis. VINCENT DICKINSON.

Hæmaturia with bronzing of the skin in new-born infants (*'La Clin. Infant.,' March* 15, 1905).—**Leroy** and **Delfosse** reported at the

Clinical Society of Lille a very well-marked case of this, also called Winckel's disease. The infant was aged 4 days; its parents had never been ill; the mother had already given birth to a healthy infant, and the last pregnancy had been perfectly normal; the infant was born at term after an easy labour. After the birth attention was drawn to hæmorrhage of the cord; the blood which flowed showed little disposition to coagulate. By degrees the colour of the infant changed from pink to yellow, and, at the end of a couple of days, to olive green; the child was feeble, moved but little, and took the breast with difficulty. Emaciation was rapid, heart's action frequent, and pulse uncountable; respiration accelerated. Diarrhœa set in, consisting of meconium with black and red blood; thrush developed, epistaxis and hæmatemesis were noted. The few drops of urine on the napkins were very distinctly brown. The feet and hands were cyanosed, and here and there were seen subcutaneous petechiæ. Coma supervened, and the infant died on the fourth day. The usual symptoms of this disease, which occurs exclusively in new-born infants, were present in this case, and in addition, those of hæmatemesis, melæna, and epistaxis, which are not always noted, and which add to the gravity of the prognosis. The large quantity of blood lost would explain the rapid action of the heart, since the beats are usually slowed in this disease. The etiology and pathology is far from being cleared up, and the general opinion is that the disease is due to an infection analogous to the infectious jaundice described by Lesage and Demelin.

VINCENT DICKINSON.

Acute pyelitis in infancy (*'Arch. of Pediatrics,'* 1905, *vol.* XXII, *p.* 172. —**R. G. Freeman** records a case in a male infant, aged 8 months, who was seized with vomiting and high fever. For twenty days medication was directed to gastro-enteric symptoms, but the fever persisted. On the twenty-third day the urine was acid, 1010, and contained a large amount of pus, a few hyaline casts, and a trace of albumin. Pure cultures of Bacillus coli communis were obtained from it. The temperature chart was somewhat like that of typhoid fever. Gradual recovery ensued. Urotropin and citrate of potash were given. The importance of the disease is great, for it is probably very often overlooked. Cases have been recorded by Holt (3), Heubner (2), and Thompson (8). Most of the patients are girl babies. The bacillus coli is the common organism. The clinical features do not indicate that the pelvis of the kidney is infected. Usual symptoms are high, irregular fever, abnormal stools, and sometimes chills. Consequently a diagnosis of gastro-intestinal disturbance is commonly made and the urine is not examined. The urine is always markedly acid, and the essential treatment consists in making it alkaline. **M. Hartwig** (*'Berl. klin. Woch.,' November* 30, 1903) reported three cases. EDMUND CAUTLEY.

Hæmorrhage in the newborn (*'Arch. of Pediatrics,'* 1905, *vol.* XXII, *p.* 43).—**W. R. Wilson** discusses the association of certain hæmorrhagic tendencies in the newborn, with evidence of syphilis. Syphilis may affect fœtal nutrition and development. It may give rise to hæmorrhage through a constitutional tendency, for often there is no cachexia, and the infant may be well nourished. In ten out of forty-five cases, the majority of which were fatal, evidence of syphilis was obtained. The blood may come from minute vessels in skin, mucous membranes, serous membranes, meninges and brain, and the parenchyma of various organs and glands; from the conjunctiva, ears, and from the umbilical cord. The extent of the bleeding varies. Hæmatemesis is the most common form. It is more probably due to some change in the character of the blood than to changes in the walls of the blood-vessels. Perhaps altered blood-pressure has sometimes an influence. The coagulability of the blood is reduced. On the question of an infectious causation the writer points out that various organisms may pass from the intestinal tract into the blood during the last few days of life. In three out of ten there was intra-cranial hæmorrhage; umbilical bleeding in six; cutaneous in four; mouth in one; serous membrane and lungs in one; sclera in one. Among the post-mortem evidence of syphilis may be mentioned syphilitic enlargement of the liver and chronic hepatitis. In one case there was marked syphilitic degeneration of the placenta. Three of the infants were stillborn and one was premature. Icterus is present in some degree in almost every case. One theory is that the hæmorrhage is due to its toxic effect. More probably the icterus is due to the blood changes which cause the bleeding. **Behrend** (‘*Deutsche Zeitschr. f. Prakt. Med.*,’ *Bd. F.*, *p.* 289) found subpleural effusion, white hepatisation of lungs and gummatous nodes in an infant born with a petechial eruption and a clear history of syphilis. Wilson urges prompt antisyphilitic treatment if there is evidence of internal hæmorrhage and of syphilis. Of other drugs he mentions suprarenal extract, gr. ½ for a dose; adrenalin solution, 0·001 per cent. in drop doses; gelatin water, two drachms to a pint; fluid extract of ergot, in drop doses; and calcium chloride, gr. ½ every two hours. EDMUND CAUTLEY.

Enuresis (‘*Arch. of Pediatrics*,’ 1905, *vol.* XXII, *p.* 198).—**J. R. Clemens** states that in his experience the commonest causes of incontinence of urine are, in order of frequency: (1) hyperacidity of urine—a condition persisting by night and day; (2) adenoids—nocturnal incontinence, true enuresis; (3) chronic interstitial nephritis—nocturnal and diurnal incontinence; (4) alkalinity of urine, due to fixed alkalies; incontinence by night and day. He regards chronic interstitial nephritis as far from infrequent in little children. For the treatment of alkalinity of urine he recommends acid sodium phosphate. EDMUND CAUTLEY.

Sclerema neonatorum (‘*Arch. of Pediatrics*,’ 1905, *vol.* XXII, *p.* 264).—**Jacob Sobel** reports a case which ended in recovery. The first case was described by Uzemberius, in 1718, and various conditions have been included under this designation. The mother of the child was 42 years of age, had worked very hard, on insufficient diet and in bad hygienic surroundings, during gestation. The baby weighed 6 lbs. at birth. The left arm was noticed to be “black and bluish” and firm. A similar condition was found on the tenth day in the buttocks. When seen at the age of 5 weeks, the skin and subcutaneous tissues in both deltoid regions were firm, board-like, bluish, and irregular to the touch. The supinator regions of both forearms, pectoral and gluteal regions, inner sides of thighs, and skin of the back were also affected. The skin could not be raised from the subjacent tissues. The face was absolutely free. Pressure and handling caused pain. There was no pitting on pressure. The distribution was strikingly symmetrical. Calomel, warm baths and massage, at first with olive oil, and then with a mixture of mercury and boracic acid ointments, with subsequent return to the olive oil, was the mode of treatment. At the age of 7 months the child was well, and the skin and subcutaneous tissues were normal. **Sara Wilt-Kakels** (‘*Pediatrics*,’ January, 1905, *p.* 33) showed a case in a boy, aged 7 weeks, at a meeting of the New York Academy of Medicine, October, 1904.

EDMUND CAUTLEY.

Diagnosis of cerebro-spinal fever (*'Pediatrics,' January*, 1905, *p.* 28).—**Max Mailhouse** states that the diagnosis of a typical case during an epidemic is easy. Sudden onset, headache, vomiting, fever, rigidity of and pain in neck muscles, and delirium form a characteristic clinical picture. "Spotted fever" is a bad name, for spots are not common, not more frequent than in typhoid fever, and less characteristic. Rapid, ambulant, and sporadic cases are difficult of diagnosis. Rheumatism in the neck muscles and otitis media give rise to somewhat similar symptoms. He ascribes great diagnostic importance to Kernig's sign, which, he states, is due to meningitis in the lumbar and sacral regions, producing irritation of motor and sensory roots; to the presence of the diplococcus in the fluid obtained by lumbar puncture; and to early *tâche cérébrale*, dilatation of the pupils on forcible flexion of head on the chest and contraction on bringing the head back again, and to herpes. As distinguishing it from tuberculous meningitis, he lays stress on the sudden onset, comparatively early coma, prominent spinal symptoms, early rigidity and retraction of head, acute course, presence of herpes and other rashes, early Kernig's sign, marked general hyperæsthesia of the skin, less frequent paralysis of cranial nerves, deafness, and absence of teeth-grinding, hydrocephalic cry, and tubercles in the choroid. Other diseases which may simulate it are typhoid fever, pneumonia, smallpox, poliomyelitis, intermittent fever, malarial affections, tetanus, and even alcoholic delirium. EDMUND CAUTLEY.

Permanent dysarthria in an epileptic child (*'Journ. de Neurologie,'* 1904, *No.* 1).—**Decroly** mentions the case of a boy, aged 4 years, who developed epilepsy after an attack of whooping-cough. His intellect and general disposition also changed for the worse, while his speech became very difficult. Drug treatment led to a great diminution in the frequency of his fits, but was without effect on the dysarthria. A. ERNEST JONES.

Chronic, flaccid, congenital chorea (*'Arch. de Neur.,' vol.* XVIII, *p.* 488).—**Audry** and **Porot** describe a case of this rare affection in a boy, aged 5 years. The movements persisted during rest; the intelligence was unimpaired. The writers discuss the various classifications of the congenital choreas. A. ERNEST JONES.

Overgrowth, with precocious genital development (*'Arch. de Neur.,' vol.* XVIII, *p.* 496).—**Hudovering** and **Papovik** describe a boy, aged 6 years, measuring 2 feet 8 inches high, and having the genital organs of an adult. A. ERNEST JONES.

Cretinism, with von Recklinghausen's disease (*'Arch. de Neur.,' vol.* XVIII, *p.* 497).—**Meige** and **Feindel** record the co-existence of these two diverse affections in a girl, aged 18 years, and speculate as to the pathogeny thereof. A. ERNEST JONES.

Hippus in chorea (*'Soc. de Neur. Paris,' November* 3, 1904).—**Cruchet,** in a discussion on the significance of hippus, observed that it was always present in cases of chorea, whilst it was absent in all the varieties of tic. He drew attention to the errors that the existence of the phenomenon might give rise to in examining the light reflex. A. ERNEST JONES.

Some thoughts on convulsions during infancy and childhood (*'Lancet,'* 1905).—**H. Ashby** divides the exciting causes of convulsions into

(1) reflex, such as from gastro-intestinal causes; (2) toxic, in infectious fevers; (3) central, as in meningitis; (4) epileptiform, where no cause can be found. These causes act on nervous centres which are unstable and very susceptible to reflex stimulation. This instability, or lack of control, varies greatly in different individuals, and the amount is greatly influenced by heredity or the presence of rickets. He takes exception to the view of Gowers and Spratling that the chief cause of convulsions in early infancy is due to lesions of the brain. He considers they are generally reflex from gastro-intestinal disturbances, and he considers these causes are really responsible for those convulsions which are put down to teething. It is impossible to say from the nature of the fit whether it be due to reflex irritation or to organic brain disease. In infancy frequently recurring fits without apparent cause suggest mental feebleness with epilepsy, a failure of development having taken place during antenatal life which has interfered with the development of the higher centres and rendered the nerve-cells unstable. Ten per cent. of those who suffer from epilepsy in later life have had convulsions during infancy. As regards prognosis one must rely upon whether a reflex cause can be found or not. J. PORTER PARKINSON.

Theoretical observations on convulsions of children ('*Versammlung Deutscher Naturforscher und Aerzte in Breslau*,' 76).—**Hochsinger** separates the functional convulsions of childhood into "occasional" and "hyper-excitation" convulsions. The first group embrace the convulsions arising and dependent upon infectious diseases and intoxications, as well as the reflex convulsions, in which, after elimination of the cause of the fit, no anomalies of the nervous system can be demonstrated. In the second group there exists also, apart from the attacks, a psychical hyper-excitability, very often in conjunction with mechanical and galvanical hyper-sensibility. The tendency to convulsions of children, though based on a physiological background, is, in every individual case, a pathological condition. Soltmann's view of the inexcitability of the cortex of the newborn is erroneous, though undoubtedly during the first weeks of life the cortical inhibitory apparatus is corresponding to the deficient psychical functions, only poorly developed. The absence of hyper-excitation convulsions during the early months, and the prevalence of tonic spasms during this period, as well as the greater incidence of hyper-excitation convulsions during the latter months of suckling, and the appearance of clonic spasms during later childhood, find their physiological explanation in the conditions pertaining to the development of the brain and of the muscle movements. In amplification of the latter point, and to explain the difference in the clinical pictures of fits according to the different epochs of childhood, Hochsinger invokes Kassowitz's doctrine, that the two histologically different structures of muscle, the fibrillæ and the sarcoplasma, have a different and separate nerve supply, the former being of an exciting, the latter of an inhibitory nature. As long as the psychical apparatus is only partly developed, elongation of muscle, produced by action of the inhibitory fibres, must be of far less import. Excitation of the central nervous system during the earliest epochs of life must therefore result in tonic contractures. The physiological myotonia of the newborn is explained by the same doctrine. The hyper-excitation convulsions are again subdivided into simple convulsions and tetany. Both are characterised by abnormal psychical hyper-excitability, evidenced by panting or the holding of breath during crying, or when in anger.

D. O'C. FINIGAN.

Pathology.

The vernix caseosa and its relationship to hereditary seborrhœa and fœtal acne (‘*Presse Médicale*’ of *March* 18, 1905).—**Jacquet** and **Rondeau.**—An interesting communication on this subject appeared in the above paper, which deserves reporting at some length. With regard to the common dictum that the fœtus at birth is covered with a sebaceous coating in order to protect it from the action of the amniotic fluid, **Elsasser** and **Ch. Robin** state that the first part of the proposition is exaggerated, and the second part incorrect, and the result of an examination of 287 births shows the vernix to be copious in 138, or 41 per cent.; scanty in 99, or 34 per cent.: and absent in 50, or 17 per cent. But however inconsistent and variable in quantity, the vernix presents a remarkable and systematic fixity as regards its distribution, so that posteriorly the vertebral furrow, shoulders, lumbosacral region, and anteriorly the eyebrows, ears, inguinal and axillary folds, palmar and plantar regions, are the parts preferred, and even when the coating is general, which is rare, it preponderates in the same localities (*vide* Fig. 1). Now, wherever the vernix is absent the integument is free from any alteration whatever, and the coating itself presents great variety, being at times creamy, yellowish-white like lard, at others more fluid, almost diffluent, or else more cohesive like mastic. The histology of the vernix is far from being as simple as was first supposed; there are three principal elements—1st, cells which are very abundant and are of epidermic type, globular and hyaline, often nucleated (**Galippe** and **Beuregard**); 2nd, free fat as shown by reaction with osmic acid; 3rd, lanugo hairs which are seen in great numbers in washings of the vernix, thus demonstrating the remarkable

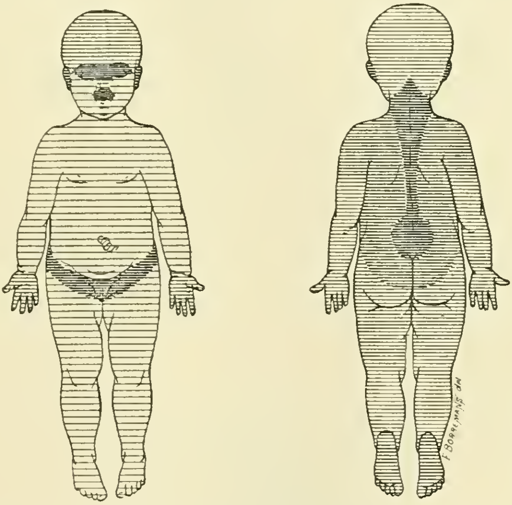


FIG. 1.—Scheme of anterior and posterior aspects of a fœtus at term; the deeper shadowing shows the regions where the vernix ordinarily predominates. Illustration taken from ‘Annales de Dermatologie et de Syphiligraphie.’

activity of the sebum of the hair-forming apparatus of the fœtus. There is another still more remarkable form of activity, however, which is that a large number of fœtuses from the seventh month up to term show a true "miliary sebaceous acne." This acne occupies the whole of the cutaneous surface, except the palms and soles, but the face is chiefly affected; it appears as fine, yellowish-white granulations, of the size of a pin's head, round, prominent, shining, sometimes translucent like a miniature pearl. Round the lobes of the nostrils the characteristics are somewhat different; it is less circumscribed and prominent, less pearly, more like a yellow granule in the transparent skin, but presenting always a white distinct point which, with the aid of a lens, is seen to be a hair. At other times there are prominent papules, sometimes yellowish-white, but usually with a red base, which makes them indistinguishable from common indurated acne. Between these lesions the skin is healthy, or presents fine telangiectasis or erythematous blotches. The nose itself is more often than not cold and soft, and it is

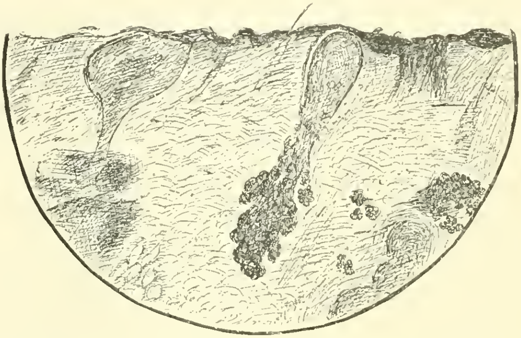


FIG. 2.—Section from alæ nasi of a fœtus of 7½ months. Two sebaceous glands are seen with the excretory ducts dilated and filled with sebum. One of them forms a closed system covered by the horny layer which is slightly raised. Illustration taken from 'Annales de Dermatologie et de Syphiligraphie.'

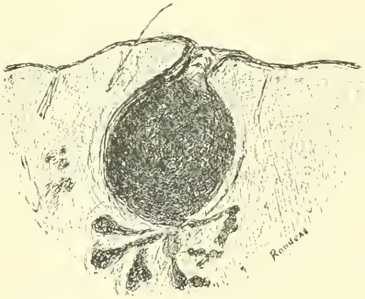


FIG. 3.—Section from alæ nasi of a fœtus of 8 months. A sebaceous gland is seen, in which the excretory duct has taken on an enormous pseudo-cystic development. The underlying glandular acini are atrophied. Illustration taken from 'Annales de Dermatologie et de Syphiligraphie.'

easy to squeeze out from the nasal furrows a quantity of white vermiform filaments, the contents of the sebaceous glands; this process may be repeated with the same results for five days, but then a retrogression takes place, and at the age of 2 or 3 months there is rarely any trace of sebaceous eruption, the fat has really been reabsorbed. The histology of these lesions consists in round or oval ampullæ, or little pockets attached to the epidermis by a short neck (*vide* Figs. 2 and 3). The sebaceous matter is not always homogeneous, oily drops are often seen detached from the rest of the substance, leaving it less plastic and drier. The origin of these dilated follicles is simple: From the fourth month of intra-uterine life the sebaceous secretion is active; at this time the horny layer is continuous, there are no cutaneous pores, so that the *vis à tergo* acts by distending the ducts, and thus are formed sometimes enormous sebaceous collections which at a later period become the habitat of the micro-bacillus. Thus, the classic opinion of the biological significance of the vernix and of fœtal acne is worthless, and another explanation must therefore be sought. As a preliminary, attention must again be called to the localisation of the vernix posteriorly in the regions of the shoulders, the vertebral groove, and the loins. Now, these regions are distinguished by an important characteristic, the striking predominance of the hairy system, not in the adult, but in the fœtus and newly-born child. Superficial observation may seem to show that hair is most abundant on the scalp, but as a matter of fact the hairy development in these regions is very much greater than it is in the adult, for although these hairs are thin and almost colourless, they are so abundant that some newborn infants are like young fawns. It is impossible not to be struck with the resemblance of this hairy coating to that which obtains in the animal kingdom, where the fur is thicker, more bristly, and of darker colour, on the upper aspect, which corresponds to our posterior aspect. However that may be, the large number of children whose maximum hairy development corresponds exactly to the regions where the vernix is most abundant, the sebaceous milium underlying these regions and absent from other parts, point to the conclusion that the vernix caseosa finds its explanation in the *activity of a pilo-sebaceous system in a condition of involution.* This explanation, however, is in itself insufficient, and being struck by the fact that these newborn infants with very copious vernix were the offspring of syphilitic, tubercular, or alcoholic parents and of albuminuric mothers or those having painful pregnancies, the authors instituted an inquiry in conjunction with MM. Bar, Brindeau, Lequeux, and Renouf. In 254 cases of parturition their results were, as regards the quantity of vernix:

	Pathological series, percentage.	Normal series, percentage.
Excessive	20	5·5
Abundant	40	36
Moderate	21·9	24
Scanty	8·7	13·8
Absent	9·3	29

From these statistics the following conclusion is derived: the vernix is an acute kerato-seborrhœa produced by a pathological exciting cause which originates from the genitory plasma, and which is fixed and localised by an endocutaneous fœtal stimulation. Finding this explanation inconclusive, and being struck by the analogies in locality between these facts and those of adult seborrhœa, such as the invasion of the nose, naso-alar furrows cheeks, chin, eyebrows, and lobe of ear, and more especially by the absence of any microbe in the case of new-born infants, an inquiry into 247 cases of infantile or fœtal sebaceous milium was undertaken, with the following results :

	Mother seborrhœic.	Mother not seborrhœic.
Milium abundant . .	63 per cent.	. 35 per cent.
,, moderate . .	19 ,,	. 25 ,,
,, scanty . . .	9 ,,	. 12 ,,
,, absent . . .	7 ,,	. 26 ,,

These facts prove the importance of the hereditary factor, and we may infer that sebaceous milium and infantile acne are a manifestation of hereditary seborrhœa. Since slight degrees of seborrhœa are so common the authors sought a specific cause for these cases, and suggest that an analogous relation exists in the fœtus between the development of the mammary gland and facial acne ; they note the quiescence of the genital system in early childhood and its awakening at puberty and interpret the seborrhœa of adolescents as a revivifying of embryonic evolution, considering as unnecessary the hypothesis of a seborrhogenic micro-bacillus. Towards the end of the fourth month of fœtal existence the phase of "sexual indifference" comes to an end ; from that time the evolution of the genital system becomes particularly active ; the ovules and the semeniferous ducts are formed. The uterus of the new-born, as Halban says, is hyperæmic, hypertrophic, and its mucous membrane shows the usual menstrual alterations : some female infants have a true menstrual discharge soon after birth. The prostate increases in size, the testicle swells, and some infants at birth, as has been noted by Bar, present a hydrocele comparable to those of adults. During this time the galactiferous ducts swell, their epithelium desquamates, in certain infants of both sexes the swelling is considerable and there is an appreciable secretion of colostrum. Thus, there seems to be at this intra-uterine period a crisis like a miniature puberty, which is attended with cutaneous stimulation as in adults ; it has its intense development of hair, its seborrhœa, in the shape of fœtal milium, its acne with comedones and possibility of becoming indurated or nosaceous. Sebaceous milium and fœtal acne are therefore the sign of a special organic stimulation, the sexual, as in the adult. They are the concomitants of a miniature puberty, and the vernix caseosa is a fatty keratosis and is related to the pilo-sebaceous function and influenced by the same functional stimulation as the milium itself. VINCENT DICKINSON.

A case of meningo-encephalitis in a breast-fed infant ('*Riv. di Clin. Pediat.*,' *January*, 1905).—**Pacchioni** describes this case occurring in the children's clinic at Florence. The child, a male, aged 5½ months, had been subject to repeated gastro-intestinal disturbance. At 4½ months he was seized with high fever, cough, ocular and nasal catarrh and diarrhœa ; some days later, painful swelling in various joints. At the end of four weeks rigidity in the occipital region, vomiting, and restlessness supervened. On March 4 he was admitted into hospital and observed to be rickety and hydrocephalic. Kernig's phenomenon was present, but Babinski's sign absent, slight *tâche*, increased patella reflex and rigidity of extremities, swelling of right knee, from which was extracted a little flocculent liquid which was sterile. By lumbar puncture a few drops of a bloody liquid were obtained also sterile, which contained a large number of polymorphonuclear leucocytes. On March

6, the retraction of head became more marked and there was some contracture in upper limbs. Slight albuminuria. Râles at left pulmonary base. March 7, vomiting and a convulsive attack. On March 9 the rigidity began to decrease, and the albumin disappeared. On March 11 a third lumbar puncture extracted a few drops of a bloody fluid from which cultures of Pfeiffer's bacillus were obtained. A few days later the child left the clinic, and when seen two months later there was still slight contracture of the lower limbs, but the joints showed nothing abnormal. A diagnosis of meningo-encephalitis due to Pfeiffer's bacillus was made.

Vincent Dickinson.

Clinico-bacteriological notes on diseases of the digestive track in children ('*Gaz. Internat. di Med.,*' *December*, 1904).—In the present article **Mazzeo** wishes to insist once more on the importance of bacteriological investigation for an exact diagnosis of certain morbid processes. He describes eight cases of streptococcic and staphylococcic stomatitis, two cases of gonococcic stomatitis, and one of colibacillary. He draws attention to intoxications of alimentary origin, often mistaken for typhoid fever or cholera, and which can only be accurately diagnosed on the basis of negative bacterioscopic research. He further demonstrates the actual inaccuracies in an exclusive classification of infantile enteropathy on an etiological basis, and describes a case of follicular enteritis in which examination of the fæces showed B. mesentericus and streptococcus pyogenes, which ultimately disappeared on the eighth day of the disease, together with blood and pus corpuscles. In three other cases of follicular enteritis, one arising during convalescence from influenza and two during that of measles. the streptococcus pyogenes appeared. In two cases of cholera infantum there appeared proteus vulgaris, vibrio subtilis, tirothrix, and B. mesentericus in the first, while in the second case the proteus was associated with subtilis, tirothrix, ærogenes, and with streptococci.

Vincent Dickinson.

The weight of the brain in infants and children ('*Neurolog. Centralblatt.,*' *vol.* XXII).—**H. Pfister.**—The results are reached by an examination of 302 brains. The main conclusions are: (1) the average weight of the *brain* is greater in boys than girls at all ages, this difference increasing with age; (2) a third of the total growth occurs in the first eight months of life, the next third taking two years; (3) the *cerebellum* weighs 20 grammes at birth and 150 in an adult man; it weighs more in males than females, especially in the later years; (4) at birth it weighs 5·5 per cent. of the total brain, in the adult 11 per cent.; its rate of growth is more rapid than any other part of the brain; (5) the *cerebrum* always weighs more in males than females; it grows slower than the rest of the brain, especially at first; (6) the *rest of the brain* weighs more in males, but this difference does not increase with age. Its rate of growth is the same as that of the brain as a whole.

A. Ernest Jones.

Anencephaly with amyelia ('*Arch. de Neur.,*' *vol.* XVIII, *p.* 488).—**Brissaud** and **Bruandel** give a full account of the anatomy of a child, born dead at seven and a half months. Extensive malformations of the cranial and spinal cavities were present. The rest of the body was normal, save that a large umbilical hernia was present.

A. Ernest Jones.

Pulmonary osteo-arthropathy (*'Arch. of Pediatrics,'* 1905, *vol.* XXII, *p.* 161).—**D. J. M. Miller** reports a case in a girl, aged 8 years, in which the arthropathy was limited to the terminal phalanges. The clubbing was very marked; the nails curved like a parrot's beak and brittle; the fingers long and resembling drumsticks. The toes were similarly but less affected. Death resulted from marked interstitial pneumonia and purulent bronchitis. Marie named the condition in 1890. Independently and almost simultaneously v. Bamberger reported similar cases. Arnold suggested the name Secondary Hyperplastic Ostitis, because the association with pulmonary disease is not essential and the joints usually show no change. It is associated in about three fourths of the cases with tuberculosis, bronchiectasis, and other suppurative affections of the lungs and pleura. In a few cases no primary disease has been found. Anatomically it is an ossifying osteo-periostitis limited usually to the distal ends of the long bones; less frequently affecting the carpal, tarsal, and phalangeal bones. In severe cases there is kyphosis of the lower part of the spine. A large part of the deformity during life is due to thickening and swelling of the soft parts. The characteristic clubbing depends almost entirely on this. The swellings about the joints, giving the impression of arthropathy, are due to similar thickening. F. R. Walters recognises three groups: (1) typical osteo-arthropathy with peculiar form of clubbed fingers and changes in the long bones; (2) peculiar clubbed fingers only; (3) a mixed group. Miller suggests that the ordinary clubbed fingers of congenital and chronic heart disease and of chronic lung disease should form another group. The clubbing of the fingers in osteo-arthropathy is characteristically different, the nail being claw-like and incurved, like the beak of a parrot, and the fingers assuming the shape of a drumstick, "trommeldchägel finger," from hyperextension and enlargement of the terminal phalanx. Intermediate forms occur. The nails also differ, being rosy red, striated and brittle, instead of somewhat blue or cyanosed. Marie and v. Bamberger ascribe the changes to absorption of poisons from the seat of primary disease. Venous congestion is an accessory factor. The affection is exceptionally rare in children, only five or six typical cases of Marie's type being on record. EDMUND CAUTLEY.

Affections of the heart in scarlet fever (*'Münch. Med. Wochenschr.'*).—**Schmaltz** found 65 cases of heart trouble in 191 cases of scarlet fever. A systolic murmur is often heard during the first three weeks; this may either disappear after a few days or become more pronounced. It is often accompanied or preceded by accentuation of the second pulmonary sound; and the heart may be irregular. The cases showed few symptoms and were never fatal. In 29 cases which were under observation for more than a year, in 16 there remained permanent initial insufficiency, and in others a systolic murmur of variable intensity. From pathological evidence the author considers myocarditis the chief cause of the cardiac complications. Prolonged rest in bed is most desirable for the prevention as well as the cure of these cardiac complications. The author seems to place much importance on the presence or absence of a murmur, which most of us in this country consider is only of importance when met with in conjunction with other signs of mitral disease, such as enlargement of the heart, etc. A record of these other signs would undoubtedly add to the value of the paper. J. PORTER PARKINSON.

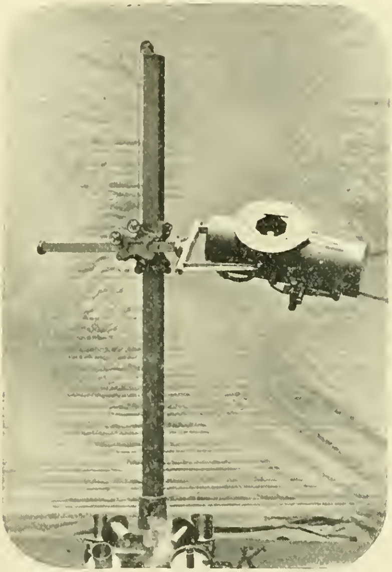
Therapeutics.

The use of citrate of sodium in the vomiting of infants ('*La Pediat. Prat.*,' *April*, 1905).—**E. Ausset,** of Lille, has followed up the experiments of Variot, Poynton, and Wright, and obtained excellent results from this method of treatment in infants who could not digest cow's milk. Gastric tolerance was re-established quickly in all the cases, and the vomiting ceased more rapidly than with other methods, such as with Vichy water. He employed a solution in distilled water 1 in 60. The drug must be freshly prepared and the doses given varied from a coffee-spoon to a table-spoonful in each bottle, or given immediately before each time the infant is put to the breast. VINCENT DICKINSON.

Diphtheria ('*Pediatrics*,' *April*, 1905, *p.* 204).—**T. F. McMahon** discusses the uncertainties of early diagnosis and the necessity of early and vigorous treatment. The disease may be overlooked from failure to examine the throat, an examination which should never be omitted in a sick child, no matter what the symptoms are. Tonsillitis may be diagnosed erroneously. Suspicious cases are not always watched sufficiently closely, and too late the patient is found desperately ill. "Contacts" are not protected by preventive inoculation. Antitoxin is not used in large enough doses. In laryngeal diphtheria accessory means of treatment, such as calomel fumigation and intubation, are not adopted. Antitoxin treatment is postponed, although a correct diagnosis is made. For these reasons the mortality from diphtheria in Ontario, as elsewhere, is altogether too high. It is not always possible to diagnose diphtheria at the first inspection, nor are bacteriological reports invariably to be depended on. Typical cases may fail to yield cultures of the bacillus. Hence in every suspicious case antitoxin must be given, and given freely. Do not wait for a bacteriological report. McMahon has never seen any bad results from injection but mentions expense as a serious objection, especially in the matter of preventive inoculations. EDMUND CAUTLEY.

On long pauses in the feeding of infants ('*Corresp. Blatt. für Schweizer Aerzte*,' *No.* 17, 1904).—**E. Döbeli.** The alteration in the stomach-functions, especially its motility in infants suffering from gastro-intestinal disorders, demand strict observance of long intervals, at least four hours between feeding. The anorexia of these children, especially during an acute attack, points to their need for food being considerably reduced. Not to be confused with need for food is that for water in infants suffering from profuse diarrhœa. As the former is diminished during the acute stage, so the latter is enormously increased, and must receive very special attention. In these cases it is of the greatest importance to give the child in between the ordinary meals very frequently small quantities of weak tea, albumin-water, or barley-water. If on account of repeated vomiting it is found impossible to cover the loss of water by these means, saline infusion must be resorted to. D. O'C. FINIGAN.

The treatment of ringworm by X rays ('*La Presse Médicale*,' *December* 28, 1904).—**Sabouraud** and **Noiré.** In 1896 Sabouraud wrote as follows: "Not only is there not any treatment at present known which cures ringworm, but I believe I am correct in saying that no antiseptic will ever attain this end, because, although the chemical nature of the antiseptics be varied, their power of penetration is scarcely altered. The root of the hair is inaccessible to external antiseptics." He therefore abandoned all antiseptic treatment, and his researches aimed at discovering an agent which would suspend the function of the hair-papilla. With this object the salts of thallium were tried, but he was compelled to discontinue their use. Radio-therapy, however, has at last solved the problem. At first the results were irregular, some authorities finding it necessary to apply the X rays as often as five or ten times on the same patch before depilation could be produced; others found that infected hairs grew on the patches after depilation; again, others experienced calamities such as cicatricial alopecia. His present method produces complete depilation after one exposure only, and entirely avoids all risks of injury to the patient. The plant in use at the "École Lailler Hôpital St. Louis" is as follows: There are two static machines, one with twelve plates and the other with ten, driven by motors worked by the ordinary electric light current. These are in a separate room enclosed in glass cases to protect the machines from the variations of humidity and to free the operator from the noise. Insulated wires from these pierce the wall into the operating room, where they are connected with the X ray tubes. A regulating tube is used, and a sparking gap of 10 cm. is placed in the circuit; there is a wire at the side of the tube, which can be heated, when the tube becomes so hard that the 10 cm. gap is sparked across. The tube itself is enclosed in a metal case, which has a circular opening towards the patient's head. To this opening can be fitted metal tubes, which vary in diameter according to the size of patch to be treated, but which are constant in length. The length is such that the patch on the head is 15 cm. from the anode. There are then two constant quantities—the hardness of the tube and the distance of the patch from the anode—but even with these the number of rays given off from the tube in a given time is found to vary. A method of measuring this has been discovered in the Sabouraud Noiré pastille. In his earlier experiments Sabouraud used Holzknecht's pastilles, which consist of a mixture of alkaline salts, which change colour slowly under the action of the X rays. They are graduated to a scale of twelve divisions, each unit being called an "H." It has been found unsafe to go beyond 5 H at one sitting. The disadvantages of Holzknecht's pastilles are—(1) they are a patent and secret preparation; (2) their price is high (2*s.* 1*d.* each); they can be used, it is true, several times, but the colour rapidly becomes inaccurate; and (3) after exposure to the X rays the colour goes on changing a little in daylight, and thus is inexact at the end of the operation. The Sabouraud and Noiré radiometer consists of paper coated with an emulsion of platino-cyanide of barium in a collodion of the acetate of amyl. This changes colour under the action of the rays, and it was easy, therefore, to obtain a standard water colour tint, which corresponds with the 5 H of Holzknecht. This tint is of a brownish-fawn colour and is called the "teinte B." When the pastille has reached this sufficient rays have been used to produce total depilation without running any risks. These pastilles are, however, less sensitive than the Holzknecht pattern, and it is therefore necessary to place them on a metal support half way between the patient's head and the anode. They rapidly return to their normal colour in daylight, and must therefore be protected by a roll of black paper if the machine is used in a room which cannot be darkened. To cure a patch of ringworm, then, the head must be placed at 15 cm. and the pastille at 8 cm. from the anode, and when the colour of the pastille corresponds with the "teinte B" the operation is over. On the seventh day after the exposure a slight erythema is visible, which passes four days later into a faint pigmentation. On the fifteenth day the hairs begin to fall over the area treated, and depilation is complete in a few days. The X rays do not kill the fungus, at any rate under the above conditions, and if cultures are made from the fallen hairs the results are invariably positive. The re-growth is slow; this apparent drawback is one of the chief reasons of the success of the method, since the last infected hair falls out a long time before the new hairs grow. The growth is visible two months after the exposure, and is complete three months later. It is advisable to depilate a margin of 1 cm. in width around the patches, otherwise before the hairs fall the fungus may have spread. If there are more than five patches he usually depilates the whole scalp. This is done by making twelve large circles on the scalp and then treating the irregular spaces in between, whilst the circles themselves are protected with lead foil held in position by elastic bands. In order to prevent the infected hairs as they fall contaminating the healthy parts he recommends the use of an oil of cade ointment (oil of cade 10 grammes, lanoline 25 grammes) every evening. This is washed off in the morning, and the whole scalp treated with tincture of iodine (fresh) 10 grammes, alcohol (60 per cent.) 90 grammes. The edges of the circles are frequently affected with a little impetigo, and for this he uses the following lotion: sulphur precipitate 10 grammes, alcohol (90 per cent.) 10 grammes, distilled water 80 grammes. The results show



Sabouraud's apparatus for the treatment of ringworm. The lamp carries an iris diaphragm for radioscope work. For the treatment of ringworm, lupus, rodent ulcer, etc., the iris diaphragm is removed, and the cylinders, which vary in diameter according to the area to be treated, at the foot of the stand are fixed in its place. For the treatment of ringworm the patient sits in a chair, and the lamp, which can be raised in any direction, can be applied with comfort to the affected areas.

that whereas formerly the average length of treatment was a little over two years, the children can now be discharged at the end of three months. During the year 1904 this treatment has saved the "Assistance publique" the upkeep of 150 beds, representing 1,500,000 francs. The cost of a child is 2 francs 80 cents. a day. An average cure therefore used to cost 2000 francs; it now costs 260 francs. A few other practical points in connection with this treatment may be added which have been noted for the most part at Sabouraud's clinique: (1) It is more dangerous to give, within a short space of time, two applications to the same spot which are just under the maximum, than to give one application which is a little over the maximum. Sabouraud found, when experimenting, that if he continued beyond the "teinte B" for one fourth of the time more, he got a definite erythema: that is to say that, supposing he reached the "teinte B" in sixteen minutes and then went on till twenty minutes, an erythema resulted; and if, again, he went on one fourth of the time, that is to say, till twenty-four minutes, he would produce a permanent alopecia. If, then, depilation does not occur on the fifteenth day, it is necessary to wait at least until the twenty-first day before re-applying the X rays to the part. (2) Where a coil is used instead of a static machine the sparking gap should be about 11 or 12 cm. instead of 10 cm. (3) The diameter of the largest metal tube used should not be greater than 8 cm., or half the distance between the anode and the scalp; otherwise the resulting depilation will be uneven. (4) The colour of the pastille should be judged by daylight and not by electric light. In the first case under Dr. Wyndham Cottle's care treated at St. George's Hospital the reading was taken by the latter, and depilation was incomplete, the "teinte B" being reached, when judged by daylight, about four minutes after it appears present by electric light. (5) The length of time required varies according to the humidity of the day; on a dry day the "teinte B" may be reached in about fourteen minutes, on a wet day in about twenty minutes. (6) The healthy hairs fall out before the diseased ones, and sometimes even after the twenty-first day minute infected stumps may be seen in the mouths of the follicles, but later even these are pushed out by the internal root-sheath. (7) The elastic bands used to keep the discs of lead in position do not prevent the passage of the rays to the scalp below. (8) Large doses of X rays do appear to inhibit the growth of the fungus on media, although the therapeutic doses do not. (9) The treatment, besides shortening the duration of the disease, rapidly disinfects the child's head, so that it can, after one month, no longer spread the complaint. (10) The price of the pastilles is 15 francs for 100. They can be obtained from M. L. Drault and Cie., 57, Boulevard Montparnasse, Paris. (11) Since Sabouraud has used his present method he has given over 5000 exposures without any ill effects. (12) The instrument shown above is useful for all kinds of X ray work, the advantages being that it entirely protects the operator, and by means of the iris diaphragm it produces a sharper image.

WILFRID S. FOX.

Otology, Laryngology and Rhinology.

Some points concerning "adenoids" ('*The Clinical Journal*,' *No.* 651, *April* 19, 1905).—**F. J. Steward.** The structure termed "adenoids" is really a single definite body. This body, which is known anatomically as Luschka's tonsil, is a circumscribed mass of lymphoid tissue situated in the naso-pharynx. It is placed in the middle line of the upper part of the posterior wall of the naso-pharynx, extending more or less on to the roof. In size it varies in different individuals and at different ages, reaching its greatest size at about four to six years of age. The histology is that of lymphoid tissue generally. The principal pathological change that occurs is an increase in size, which is partly inflammatory and partly hypertrophic, the consistence varying greatly, so that sometimes the mass is quite soft, and in other instances it is quite firm. In some cases, again, specimens show small, cheesy nodules, which can be squeezed out of the follicles. Since this mass is a normal structure, how are we to decide when it is abnormally large? When does it become pathological? Not by digital examination. Simple digital examination, without due consideration of other points, is responsible, I am certain, for numerous mistaken ideas. The nasal tonsil must only be considered pathological when it interferes with the normal physiological functions of the nose and naso-pharynx. I refer, of course, to the production of more or less complete obstruction to nasal breathing. This interference with nasal respiration produces two direct results. In the first place, the absence of the normal changes in air-pressure in the post-nasal space produces circulatory changes, and consequently changes in nutrition, which undoubtedly cause the nasal and post-nasal mucous membrane to become more vulnerable to infective processes, and so frequent colds result. As a consequence, moreover, of the congestion associated with each cold, the adenoid mass is left larger than before, and so further interferes with the functions of the nose. The second direct result is the development of inflammatory affections of the middle ear, recurrent attacks of otitis of greater or less severity, and in a certain proportion of cases acute suppurative otitis media, ending in chronic otorrhœa, with all its attendant dangers. If the nasal tonsil is causing nasal obstruction, partial or complete, or attacks of pain in the ear and recurrent deafness, or an acute otitis media, we may say, I think, that it is pathological. Practically all the other symptoms attributed to adenoids are the direct result of the nasal obstruction, and therefore only indirectly due to the presence of adenoids. In the first place, the loss of the mechanical effects of the constant passage of air through the nose results during early life in failure of development, affecting the nasal fossæ and bones of the face generally, causing the high arched palate, narrow nasal fossæ, the long narrow face, and the open mouth. In the second class may be placed the various inflammatory conditions met with, the recurrent attacks of nasal and post-nasal catarrh and infective attacks of the mouth and upper air-passages of mouth-breathers giving rise to tonsillitis, stomatitis, pharyngitis, laryngitis, bronchitis, etc. In the third group may be mentioned those more remote conditions. I refer to night-terrors, nocturnal incontinence of urine, and other like conditions, which may be brought about by the partial asphyxia due to nasal obstruction and the mouth being involuntarily closed during sleep. We may formulate this practical rule—that before deciding that a given symptom is due to the presence of adenoids, we must be satisfied that the adenoids are causing nasal obstruction. A real danger exists of attributing all manners of symptoms to the presence of adenoids, from want of recognition of the above facts, and that Luschka's tonsil is a normal structure. On this account needless operations are performed. When nasal obstruction or ear troubles are present, and are due to adenoids, in the great majority of cases the first thing to do is to prescribe a course of general treatment, together with nasal-breathing exercises; tonics, cod-liver oil, and arsenic in particular. In many slighter cases the result is so satisfactory that no operation is necessary; in the rest the improvement in the general condition before operation is of great advantage, and the breathing exercises get the child into the way of trying to use the nose. Again, if otorrhœa be present this can often be greatly improved by treatment before operation; and lastly, if there are evidences of glandular infection, septic or tuberculous, it is most important to treat the child by general means before operation, especially with arsenic, which almost invariably causes a marked improvement, and in many cases the complete disappearance of the enlarged glands. In adenoids associated with enlarged cervical glands the removal of the adenoids, although apparently the cause of the glandular trouble, in some cases may result in immediate suppuration of the glands. If the resisting power of the glands and the individual are increased by general treatment and arsenic they can be removed with impunity. If the operator is skilled I am convinced that it is not necessary or wise to give any anæsthetic at all. In the first place, the operation is not painful; in the second place, the time taken is very small indeed; in the third place, the hæmorrhage is much less than when an anæsthetic is taken, and consequently the general effect upon the child's vitality is much diminished, so that complications are less liable to occur. Again, the risks of the anæsthetic, and of blood or adenoids getting into the larynx, are avoided, and finally the children are much less upset. Often they do not even cry, and they are usually quite themselves in a few minutes. As regards position, the right lateral, without the head hanging, is much the best if an anæsthetic is given; without, I prefer the dorsal position. The instrument I prefer is Kirstein's modification of Gottstein's curette, the wide fenestration enabling the whole mass to be included and removed in one piece. All forms of forceps, I consider, should be condemned as dangerous. If the curette is used in the proper way, one movement will remove the whole mass complete in one piece. The operator stands behind the patient. The instrument should be held like a dinner-knife, with the index finger along the back; this gives the best control. The handle is depressed until the edge of the curette gently touches the back of the nasal septum. Pushing then firmly upwards and backwards, the mass to be removed is thus pressed into the fenestrum, with the cutting edge at its upper margin. The handle is then raised, pressing backwards all the time, the cutting edge thus making a firm sweep along the upper and posterior walls of the naso-pharynx. It is often recommended to now pass the index finger and complete the operation with the finger-nail. If the whole mass is cleanly removed it stands to reason that the bruising and subsequent infiltration caused by the vigorous scratching with a possibly septic finger-nail can serve no useful purpose, and may cause harm by infection or much slower healing, owing to the bruised condition. It is often stated that adenoids grow along the margins of the Eustachian tubes and around the posterior choanæ. There may be small lymphoid nodules in these positions, but that they are not the cause of the symptoms is certain, and they need not be interfered with. If the main mass is removed and the nose and naso-pharynx properly developed afterwards by suitable breathing exercises the result is in all respects satisfactory. E. J. Cowen.

Chancre on the inferior turbinal in a child aged 7 years ('*Revue Hebdom. de Laryngologie, d'Otologie et de Rhinologie,*' *No.* 12, *March,* 1905, *p.* 337).—**Brunon** reports this case, which was brought to him for glandular enlargement in the left submaxillary region. The boy appeared ill and had a slight cough; mouth, tonsils, and ears were healthy, and externally the nose appeared normal. A diagnosis of scrofula was made. Three weeks later, a papular eruption was seen on the forehead and a typical roseola on the thorax; there was a small condyloma on the scrotum and another on the gum. On examining the nose a small red ulcer, with sharply cut edges, was found on the inferior turbinal. The child was in the habit of introducing small articles into the nose, and had probably become infected in this way. It was elicited that, three weeks before, he had suffered from coryza with sanguineous nasal discharge, and headache and sleeplessness. The author considers that such cases would be found to be not uncommon if the nose was more often examined in children. HAROLD BARWELL.

Congenital bony occlusion of the choanæ (*'Giornal d. R. Accad. di Med. di Torino, May–June,* 1904, *p.* 326).—**Calamida** reports a case in a girl aged 17 years. The facial aspect suggested adenoids. There had never been nasal respiration nor sense of smell; she had always suffered from retention of fœtid discharge and crusting in the nose; there was no ear-trouble. The right nasal passage was large and the inferior turbinal quite atrophic; the choana was closed by a septum, which felt hard to the probe, and was perforated by a small hole in its lower part. The left side showed the same anomaly, but the turbinals were normal. On posterior rhinoscopy, the septa were seen to be attached to the margins of the choanæ; there were no cicatricial bands. An immediately good result followed operation. HAROLD BARWELL.

Surgery.

A case of multiple fractures in an infant (*'Lancet,' May* 20, 1905).—A case is reported by **R. C. Dun** of a boy, aged 15 days, with multiple fractures of the clavicles, humeri, radius, and ulna on both sides, both femoræ, and the leg bones. The child was born at term of healthy parents. There was definite evidence of no less than twelve separate fractures. In seven of these bony union had already occurred, showing that the fractures occurred either *in utero* or during labour. The labour was normal, and the child sustained no injury after birth. P. LOCKHART MUMMERY.

Results of 1400 operations for the radical cure of hernia in children (*'Med. Record,' March* 18, 1905).—**W. T. Bull** and **W. R. Coley.** Of the whole total of operations, 1354 were for inguinal hernia, 35 operations were for femoral hernia, 8 for ventral hernia, 12 for umbilical hernia, 1 for lumbar hernia, and 2 for epigastric hernia. Bassini's method was that most generally used for closing the ring, and chromicised catgut was the suture material. There were 12 operations for strangulated hernia. Of the total number a relapse occurred in 11 cases. There were four deaths from the operation in the 1400 cases. P. LOCKHART MUMMERY.

Fractures in the newborn (*'Pediatrics,' April,* 1905, *p.* 227).—According to **G. C. Trawick,** fractures in the newborn are almost invariably due to manual interference in delivery, under conditions which would sacrifice the life of mother or child if it were not adopted. It is especially frequent in breech extractions. Many are due to ignorance on the part of the operator. Spontaneous multiple fractures are sometimes present, 43 in Caseaux' case, 113 in another reported instance. Fractures due to violent uterine contractions are very rare. The parietals are the most frequently fractured of the cranial bones, usually due to forceps, and trephining is necessary if there are symptoms of compression. The frequency of fractures of other bones, the mode of production, and the treatment is discussed.

EDMUND CAUTLEY.

Dislocation of a child's hip during birth (*'Revista de la Soc. Medica Argentina,' No.* 68, *vol.* XII).—**H. Vegas.** The labour had been a difficult one with a breech presentation. At the age of 5 years, when the child was first seen, the limb was adducted and rotated inwards. Skiagrams showed that the head of the femur rested above the acetabulum. After operation by the open method of Lorenz, the head of the femur occupied the acetabulum, and with continuous massage in eight months' time the patient had full use of the joint. The dislocation is produced in breech presentations by the head of the child's femur resting, during rotation, on the pubis of the mother.

T. P. BEDDOES.

Review of Book.

LEHRBUCH DER KINDERHEILKUNDE. BY VON O. HEUBNER. Vol. I; pp. 716, 47 Illustrations. 1903. Price 17 marks; bound, 19 marks, 50.

THIS treatise on the diseases of children by Professor Heubner, of Berlin, is certain to rank as one of the best books of the kind. In the first place it is the outcome of careful observation, extending over many years, and in the second it is written in a clear and straightforward way. The latter makes it pleasant reading, which is more than can be said of many medical works, German or otherwise. In this first volume, in addition to some useful introductory chapters on the child in general, its growth, and so forth, the diseases of the new-born are dealt with. Next come the diseases of the suckling. The important section on the acute infections of childhood, including the various exanthemata, is handled in an admirable and vivid manner. Under the heading of Chronic Infections, Professor Heubner describes very thoroughly the morbid conditions found in tuberculosis and congenital syphilis. Rickets and Barlow's disease are dealt with in the sixth or concluding section. The volume is furnished with an index of names and with a general index. Altogether the book can be confidently recommended to English readers, who will find Professor Heubner's descriptions lucid and thorough, whilst his general attitude is characterised by common sense and a judicious spirit.

The book is well got up from every point of view, as is to be expected from a firm of the standing of Barth, of Leipzig. Here it may be as well to remind English readers that it is always best to order German medical works in the bound form. The extra cost is trifling, and far less than one would have to pay for binding the paper-covered edition, besides saving much trouble. I venture to mention this point because it does not appear to be generally known.

GEORGE PERNET.

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Original Articles.

SOME RESPIRATORY DISEASES OF CHILDREN AND THEIR DIAGNOSIS.

By J. Porter Parkinson, M.D., M.R.C.P.,
Physician to the North-Eastern Hospital for Children, etc.

I have endeavoured in the following short lecture to pass in review some points in the diagnosis of diseases of the lungs in children, and I have illustrated some cases of difficulty by examples. I have also taken the opportunity to relate a danger which may attend exploratory puncture of the chest. Such untoward occurrences are extremely rare and, therefore, should in no way deter us in suitable cases from performing this simple operation; still, it is as well that we should be reminded that they do occasionally happen.

We may first pass in review the chief characteristics of the chest in infancy and childhood as compared with the adult chest. The shape of the thorax is somewhat cylindrical, the diaphragm is relatively high, and the breathing is chiefly diaphragmatic; on inspection we must note also any signs of rickets, any want of symmetry in shape, any lessened movements or local recession of the soft parts or the bony walls. The position of the heart's impulse also should be noted, for it is often stated that this gives more information than any other single physical sign; and we must remember that this impulse is higher up and further to the left than in the adult, being often as far as a third of an inch to the left of the nipple line up to the fourth year, and up to the ninth year it is in or near the mammary line. Up to the seventh year the impulse is often found in the fourth space, and occasionally it remains as high as this in healthy children till the twelfth or thirteenth year. The rhythm of respiration is frequently irregular in infants except during sleep, and so has no diagnostic value at this period of life. Vocal fremitus of the cry is readily obtained and should always be practised. Percussion should be especially light, otherwise a cracked-pot sound is readily produced, and this examination should not be made as far as possible during a crying fit, as then the note is apt to be dull over even normal lung, and slight differences are not readily perceived.

It must be remembered that in infants the thymus may produce dulness over the upper part of the sternum and even as low as the third rib cartilage. Owing to the high position of the diaphragm the right lobe of the liver causes dulness to be higher at the right posterior base than is the case in the adult, and from a similar cause the tympanitic stomach note may appear to be unduly high in the left axillary region.

The spleen, if slightly enlarged, as is so commonly the case in children, may give a dulness in the left axillary region which is easily mistaken for a small collection of fluids, but the descent of the upper limits of this dulness during inspiration will distinguish the spleen from causes of dulness situated above the diaphragm, which do not vary in position during different phases of breathing.

Auscultation should be practised while the child is quiet, as it is exceedingly difficult in a crying child, and for this reason it is the usual practice to reverse the usual order followed in the adult and to auscultate before percussing the chest; for the same reason it is well to auscultate the back before proceeding with the front and axillary regions.

The character of the respiratory murmur in an infant is too well known to require description; the chief point in auscultation is to be thorough, and to induce deep breathing by changing the position of the child now and then, or even to induce a cry when deep inspiration cannot be obtained by other means. Above all, do not omit to examine all parts of the chest. Pneumonia is often overlooked through want of auscultation of the upper part of the axilla, or through the mother objecting to completely bare the chest the supra-scapular regions are not examined.

Large pleural effusions in children are as a rule easily diagnosed by ordinary methods of examination, but localised collections of fluid, even when they are superficial, may present considerable difficulties, while if they are interlobar or diaphragmatic they may be easily overlooked or the abnormal signs put down to some other cause. A markedly dull or flat percussion note is by far the most valuable physical sign, and if combined with displacement of the heart to the opposite side, is almost diagnostic of fluid; but in localised empyemata this latter sign is frequently absent. Too much reliance should not be placed on auscultation. The breath sounds over a small collection of fluid, though often weak, may sometimes be loud and markedly bronchial, thus suggesting unresolved pneumonia; however, friction sounds and râles will be absent in the case of effusion, while in pneumonia the dulness and bronchial breathing may have a lobar distribution. The needle is often necessary to distinguish between these two conditions.

Exploratory puncture of the chest is, however, not free from risk. In three cases under my own care pneumothorax was produced. They were all hospital cases, and the needle was inserted with the usual precautions by house-physicians who had frequently punctured the chest previously. In one of these cases a small amount of subcutaneous emphysema also developed. In all the cases the pneumothorax was limited in extent, caused no great distress, and no bad symptoms followed, the air being rapidly reabsorbed. Unfortunately, sometimes more serious accidents may follow exploratory puncture, as was illustrated by a child under my care at the North-Eastern Hospital for Children last year. The child, aged 4 years, was admitted with a history of a chronic illness of at least two months' duration. She was thin and cachectic; there was extreme dulness over the lower part of the chest on the left side, including both axillary and subscapular regions, and over this area the breath sounds were harsh and faint. The heart appeared to be normal in position. The temperature varied between normal and 102° F. There was no sign of disease of any other organs, except that the bowels were somewhat irregular. My own diagnosis was chronic interstitial pneumonia following unresolved pneumonia; but the house-physician asked to be allowed to explore the chest in order to exclude the presence of fluid. The ordinary exploring needle was introduced in the posterior axillary line and in the eighth intercostal space to a depth of between one and one and a half inches. No fluid was found, and no blood followed the puncture. The child, however, at once turned pale and the pulse began to get small, and frequently about a teaspoonful of frothy blood escaped from the mouth, and the child died within two minutes of the puncture. At the post-mortem examination the lung was found cirrhotic; one or two of the bronchi supplying the lower lobe were full of blood. The stomach was also found distended with blood-clot. It was found that the puncture had entered the lung well above the diaphragm, and the blood in the stomach was blood which, coming from the lung, had been swallowed.

This is by no means a solitary example of an exceedingly rare occurrence, though, as it is human nature to prefer to record successes rather than failures, very few cases are published. However, I can mention other similar cases. Dr. Fortescue Brickdale related at the Society for the Study of Disease in Children an exactly similar one in a child, aged 2 years, who was suspected to have empyema; and Dr. George Carpenter published in 1893 * a case of a girl, aged 5 years, who was suffering from cirrhosis of the lung, and whose chest was explored by the house-physician. The post-mortem appearances in this case were identical with those of my patient. Dr. Thomas Oliver † and Dr. A. E. Russell ‡ each reported three similar cases.

It seems to me that there is special danger in exploring cases of chronic pneumonia, for in seven out of the nine cases referred to this was the condition of the lung at the point explored. Death from this cause also seems more common in children than in adults, for six out of the nine cases were in children under 8 years of age. The cause of death is generally syncope, which Dr. Russell attributes to reflex action through the vagus, which for some reason or other is in a condition of hyperexcitability. This syncope, with its accompanying cerebral anæmia, may produce death within a few minutes, as in most of the cases; or convulsions or delirium may come on and the patient may linger for a few days, as happened in Dr. Russell's cases—one living five and the other three days.

A large pericardial effusion in a child may give rise to extreme difficulty of diagnosis; for, owing to its pressure on the root and adjacent part of the left lung, there may be very considerable dulness over the lower part of the chest on that side, with weak or bronchial breathing and voice sounds. In many of these cases the diagnosis during life is pneumonia and the pericarditis is overlooked, the real condition of things being only discovered at the necropsy. In most of the cases the illness commenced with signs of pneumonia and there were no symptoms or signs of pericarditis.

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* 'The American Journal of Medical Sciences,' October, 1893.

† 'Lancet,' January, 1904.

‡ 'St. Thomas's Hospital Reports,' 1898.

For example, a male child, aged 12 months, was admitted into the North-Eastern Hospital on April 26th, 1905. He was well until April 20th, when he appeared to have headache, and to be ill. The next day he had general convulsions, since which there was fever and dyspnœa. On admission the temperature was 102° F., pulse 120, regular, respirations 40. He was pale and thin, with sunken eyes. The cardiac impulse was in the fourth intercostal space, half an inch internal to the left nipple line; there were no abnormal sounds to be heard over the cardiac area. There was dulness on percussion over the lower part of the axillary region and below the angle of the scapula on the left side, extending forward to join the cardiac dulness, which did not appear to be enlarged upwards or to the right. In the axilla the breath sounds were weak and distant; behind they were louder and tubular in character, with numerous fine râles during inspiration. The child, who on admission was obviously very ill, died the next day. At the necropsy the greater part of the lower lobe of the left lung was found to be collapsed, with no sign of pneumonia or pleurisy. On opening the pericardium fifteen ounces of thin pus escaped and flakes of lymph were numerous, especially attached to the visceral pericardium. The heart appeared to be dilated, but there was no evidence of endocarditis. There was some recent lymph on the pia arachnoid in the region of the optic chiasma and a few tubercles were seen on the vessels in the Sylvian fissures.

Primary bronchopneumonia in young children may give rise to mistakes in diagnosis in at least two ways. The onset of this disease is frequently attended by very marked cerebral symptoms, such as extreme head-retraction, strabismus, Kœnig's sign, vomiting, and so on. Two cases in which this difficulty occurred were related by Dr. Baumann in a previous number of this Journal, and most of us have met with similar cases. The difficulty is much increased if the physical signs in the chest are indefinite, few, or absent. It is a rule, however, for the cerebral symptoms to subside after a day or two, and at this time the physical signs in the lungs often become more definite. The rise of temperature in pneumonia is generally higher than in the early stage of meningitis, and dyspnœa and cyanosis are more marked. In children under 5 years Schroeder has found that pneumonia occurs at the apex in 44 per cent.—hence the importance of thoroughly examining this part of the chest—while I have occasionally found signs of pneumonia which have been previously overlooked by careful examination of the upper part of the axillary regions.

The amount of dulness present in pneumonia naturally varies with the amount of consolidation, and as this is frequently patchy, with intervals of healthy lung, the percussion note may in some cases be actually hyperresonant instead of dull. The breath sounds, however, remain bronchial, and the sharp crackling râles so characteristic of pneumonia in young children will generally be heard.

In secondary bronchopneumonia the symptoms are usually well marked: prostration, high fever of a remittent type, rapid breathing, cyanosis pointing decisively to thoracic disease, and signs of bronchitis are always marked in these cases, the signs of bronchopneumonia naturally varying with the size of the patches and their relation to the surface, the most reliable signs being bronchial breathing and numerous sharp crepitations during inspiration, with bronchophonic cry. In small patches of consolidation the resonance of the surrounding lung often masks the dulness and so gives rise to confusion if this physical sign be relied upon. A common mistake is to overlook some disease of which the bronchopneumonia is a complication; for example, the bronchopneumonia of measles may come on very early before the rash is due, and then the rash is often scanty and very ill defined.

If bronchopneumonia complicate whooping-cough, the characteristic whoop may disappear, and if the history be not clear the diagnosis may be impossible.

It is striking how few mothers of the hospital class recognise a whoop, and so the difficulty of an accurate diagnosis is immensely increased.

The diagnosis between bronchopneumonia and tuberculosis of the lungs is attended with the greatest possible difficulties in many cases of protracted chest disease. If the patient be old enough to expectorate and tubercle bacilli be found in the sputum, that is, of course, positive evidence; but in young children expectoration does not take place. Holt recommends the introduction of a stomach-tube into the œsophagus and examination of the mucus which adheres to it when withdrawn. On one or two occasions I have induced vomiting and stained any mucus which is voided. Tuberculin is, as a rule, not admissible, and, indeed, may be useless on account of the fever which is generally present. The presence of enlarged glands in the neck or elsewhere points strongly to tuberculosis.

The following case illustrates the difficulty of determining whether a chronic fibrosis of the lung is bronchopneumonic in origin or tuberculous. A boy, aged 4½ years, was under my care recently at the North-Eastern Hospital for Children. His family history was very indefinite. He was said to have been ailing since an attack of measles six months previously. He was undersized, thin, and anæmic. The temperature varied between 98·5° F. and 99·5° F. The skin was dry and rough, and the finger-ends clubbed. The chest was flat, and appeared smaller on the left side, which moved less than the right. At the level of the nipple the half circumference was 25½ cm. on the left side and 26½ cm. on the right. The heart's impulse was seen in the mid-axilla on the left side. There was hyper-resonance over the whole of the right lung back and front, and this extended across the mid-line almost to the anterior axillary line on the left side. The note over the left axilla and back was extremely dull. On auscultation, the breath sounds over the resonant area were puerile and loud, with a few fine inspiratory râles; over the dull area the breath sounds were weak and in places bronchial, and accompanied by fine scattered crepitations and crackling sounds. The stomach resonance reached to the fifth rib, in the left mid-axilla. The other systems showed no sign of disease. There was frequent cough but no expectoration. An emetic, however, brought up a quantity of muco-pus, and several of the most likely-looking masses were stained and examined for tubercle bacilli, but without positive result. All we can be sure of in this case is that there is a chronic fibrosis of the left lung, with much contraction, but whether due to a chronic tuberculous process it is impossible to say definitely, though there is some reason to think that it is a sequel of bronchopneumonia.

Now and then we meet with children who have had a chronic lung disease extending over months, or even years, and whose chief symptom is a severe paroxysmal cough, attended by an occasional whoop, and occasionally during each paroxysm of cough there is a most definite whooping, exactly resembling that in pertussis. The physical signs are generally those of fibrosis of the lung or bronchiectasis, and owing to their long duration most of these patients are lost sight of ; but I have been fortunate enough to see two necropsies on such cases, and in both a marked feature was enlargement of the bronchial lymphatic glands lying in proximity to the bifurcation of the trachea, and displacing by pressure the left vagus, which in one case seemed partially flattened out. In addition there was marked bronchiectasis of the bronchi supplying the lower lobe of the left lung, in one case produced probably by pressure of the enlarged glands on the main bronchus to this lobe, while in the other there was fibrosis of this lobe.

The clinical history of such cases is well exemplified by the following notes :

In October, 1903, a little girl, aged 1 year and 8 months, was admitted into the North-Eastern Hospital for Children, with evidence of pneumonia in the lower lobe of the left lung; the fever lasted at about 103° F. for three weeks, and then descended slowly to normal. Towards the end of November the temperature rose to 103° F., and remained intermittently for a week; early in December, as the physical signs still persisted at the base of the left chest, an exploring needle was inserted and a drachm or so of pus removed, containing large numbers of pneumococci. A rib was resected, but only a very small quantity of pus escaped. The abnormal signs of dulness and bronchial breathing, persisted, but the general condition of the child improved, and on February 16th, 1904, she was sent to a convalescent home in a fairly satisfactory condition, though the dulness, bronchial breathing, and friction sounds persisted over the lower lobe of the left lung. In January, 1905, the child was readmitted and was stated to have coughed ever since leaving the convalescent home, the cough being attended by marked whooping. This whooping was confirmed on admission to the hospital, the Sister informing me that she had a severe paroxysmal cough and whooped distinctly three or four times each day. She was now thin and cachectic-looking, with marked clubbing of the fingers and slightly of the toes. Over the whole of the lower lobe of the left lung the percussion note was dull, the breathing bronchial mostly, but in several spots it was cavernous, and all over were numerous fine sharp râles.

A little sputum obtained contained no tubercle bacilli. The temperature was normal, except for an occasional rise to 101° F. or 102° F. every few days. There was no displacement of the heart.

The diagnosis here was chronic fibrosis of the lung, with, perhaps, bronchiectasis following bronchopneumonia, and it is possible the bronchial glands may be chronically enlarged, pressing on the vagus, producing the paroxysmal cough and whoop. I am watching two other similar cases at the present time, one of which has whooped at intervals during the last four years.

In some cases of enlargement of these glands on bending the head backwards a venous hum may be heard over the sternum and neck; this sign, which was described by Dr. Eustace Smith, was absent in my cases.

The X rays give sometimes positive evidence of enlargement of these glands, but without their shadow is well marked it is difficult to distinguish it from that produced by the general mediastinal tissues.

Pressure of these enlarged glands sometimes produces attacks of paroxysmal dyspnœa, which may be mistaken for asthma if their pressure is not recognised. The pressure of an abscess from tubercular caries may produce identical symptoms as the above, but is more apt to produce symptoms of obstruction of the air-passages; the diagnosis of such cases is made by the recognition of spinal disease in the upper dorsal region.

In a case of this kind, under the care of Mr. Douglas Drew, which I saw with him, the abscess started from a caries of the fourth and fifth dorsal vertebræ, and caused considerable dyspnœa by pressure on the bifurcation of the trachea. The specimen was shown by Mr. Drew at the Society for the Study of Disease in Children.

A CASE OF TUBERCLE OF THE CHOROID, PRESENTING CERTAIN CLINICAL AND PATHOLOGICAL PECULIARITIES.*

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AND

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In our collective experience tubercle of the choroid is scarcely sufficiently uncommon to justify the publication of a single case. At the same time, the one we are about to relate possesses some clinical and pathological peculiarities marked enough to warrant a brief account of its main features.

The facts are as follows:

Ada S—, aged 3 years, was admitted into the North-Eastern Hospital for Children, London, on July the 23rd, 1903, suffering from "bronchitis and convulsions." According to the history, the child had been well until about two weeks before admission, when she was noticed to breathe noisily at night and to be short of breath during the daytime. The personal history was unimportant, except, possibly, for the fact that the child had contracted measles when 12 months of age. The parents were healthy. There was no family history of tubercle, although it is somewhat significant that the other children in the family are said to be subject to bronchitis.

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* A communication read at the Provincial Meeting of the Society for the Study of Disease in Children at Sheffield, June 17th, 1905.

Upon admission.—The child, whose weight is 24¼ lbs., has a slight cough, but, beyond a few rhonchi at the base of each lung, no physical signs can be made out in the chest. Temperature 101° F., pulse 124 to the minute, respiration 52 to the minute.

Progress and termination.—July the 29th, 1903: The spleen can be felt to extend 1½ fingers'-breadths below the costal margin. The child now weighs 24 lbs., or a decrease of 4 ozs. as compared with the weight on admission into hospital. August the 4th, 1903: The child's temperature since admission has ranged from 97·6° F. to 103° F., and has usually shown a tendency to rise at night to within 102° F. and 103° F. Respirations have varied from a minimum of 32 to a maximum of 76 per minute. The pulse-rate has been from 100 to 160 per minute, and it may be noted that the rate, as a rule, has been somewhat less at night than in the morning. The respirations are rapid and somewhat laboured, and the slightest exertion brings on dyspnœa and cyanosis. Resonant note all over the chest;

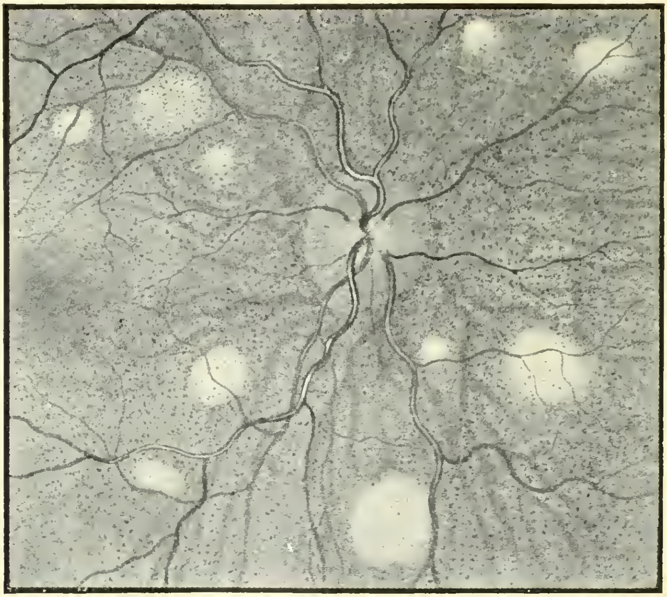

FIG. 1.—Right eye, erect image, Ada S—, aged 3 years. Desseminated tubercle of the choroid confirmed pathologically. The child died from general miliary tuberculosis, August the 11th, 1903.

a few rhonchi and râles can be heard. August the 6th, 1903: Beyond a few bronchitic accompaniments little to be heard in chest, which is resonant. The respirations are very frequent (64 to 92 per minute) and out of all proportion to the physical signs that are present. The liver and the spleen are slightly enlarged. Temperature 100° F. to 102° F., pulse-rate 152 to 168 per minute. Ophthalmoscopic examination revealed the following conditions: Neither optic papilla is well defined; retinal veins large and somewhat tortuous; retinal arteries relatively small and inconspicuous. Each fundus oculi (*see* Figs. 1 and 2) contains numerous fawn-coloured tubercles, ranging in size from those that are almost equal to the optic disc in diameter to others having a diameter about equal to one quarter of the disc. They are round or oval in shape, and are discretely arranged almost exclusively in the neighbourhood of the optic disc and yellow spot—that is to say, in the so-called "central region" of the fundus. The yellow spot region itself is not invaded. Several of the tubercles are crossed by the retinal vessels, which manifest no local changes. The number of individual tubercles in each eye was computed as

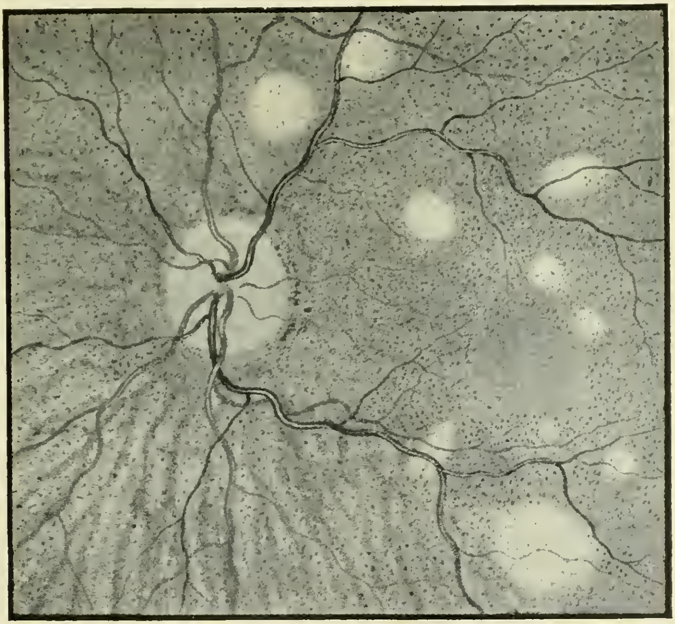

Fig. 2.—Left eye, erect image, Ada S—, aged 3 years. Disseminated tubercle of the choroid, confirmed pathologically. The child died from general miliary tuberculosis, August the 11th, 1903.

twelve. Close examination by the direct method showed that the fawn-coloured surface of individual tubercles was stippled with fine retinal pigment which, for that matter, was present over the unaffected parts of the fundus.

In face of the foregoing discovery, a diagnosis of acute miliary tuberculosis was made upon this date (August the 6th, 1903).

The child died comatose on August the 11th, 1903—that is to say, thirty-three days after the beginning of the illness, nineteen days after admission into the hospital, and five days after the diagnosis was made.

Autopsy.—The post-mortem examination, made twenty hours after death, revealed typical acute miliary tuberculosis, affecting specially the lungs, spleen, and choroid. The protocol was as follows: The lungs were very œdematous and studded with numerous miliary tubercles, but neither yellow nodules nor caseation was seen. The pleura was free from tubercle. A few tubercles were found in the pericardium. Although the bronchial glands were not much enlarged, yet some of them included tubercles. The bronchi contained mucus in some quantity. The larynx and trachea were free from morbid changes. The brain was normal, except for the presence of a few fine miliary tubercles in the Sylvian fissure and on the cerebellum. Miliary tubercles were also found in the spleen, kidneys, and liver, the latter of which showed fatty changes. The mesenteric glands were not enlarged. There were several ulcers (? tuberculous) on the external surface of the ileum, although none were found in its mucous membrane. Bladder, uterus, ovaries, and peritoneum were free from tubercle.

Pieces of the lungs and spleen were removed for microscopic examination. The eyes were placed unopened in formol, 10 per cent.

Microscopical examination.—(*a*) The *spleen* presented a typical picture of tuberculosis, being literally riddled with many giant-cell systems of the most characteristic kind. Tubercle bacilli were found. (*b*) The *lungs*, or at least those parts submitted to the microscope, also revealed numerous miliary tubercles. The intervening areas were consolidated. The consolidation consisted of cellular products in the alveoli. Some of the cells were of very large size, but for the most part were of moderate diameter with single nuclei. The alveoli in many cases contained also cells with horse-shoe shaped and multiple nuclei. In parts the alveoli were stuffed with fibrin plugs which contained but few cellular elements. Infrequently a combination of the catarrhal and the fibrinous process was noticed. The alveolar walls were thick, proliferating, and en-

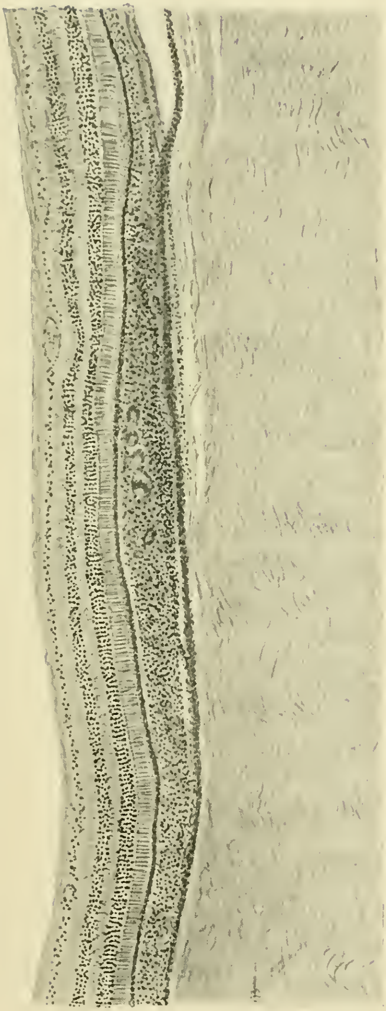

Fig. 3.—Microscopic section of a typical choroidal tubercle and infiltration of the choroid with small round cells—diffuse tuberculous choroiditis. × 50.

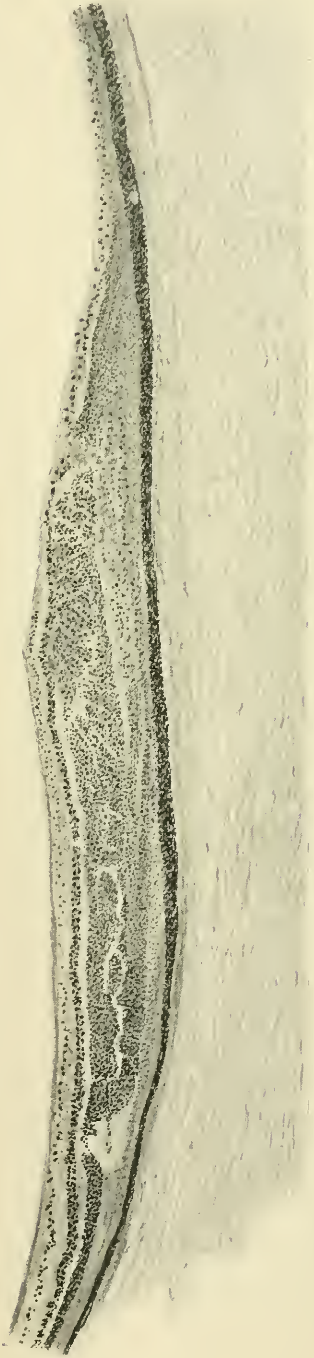

Fig. 4.—Microscopic section of a retinal tubercle. × 50.

gorged. The bronchial tubes had shed their mucous membrane and the smaller ramifications were stuffed with cellular products. Tubercle bacilli were demonstrated without difficulty. (*c*) The *eyes* were frozen, and bisected in a plane parallel to the horizontal meridian. Each hemisphere thus obtained was divided into an anterior, a middle, and a posterior third, each of which was then imbedded in celloidin and cut for the microscope. Slight inflammation of the optic nerve was present, as evidenced by the swelling of the papilla, the increased number of nuclei and of capillary vessels in the nerve, and the exudation of inflammatory products into the intersheath space.

Beyond this neuritis, the only ocular lesions found were those characteristic of acute disseminated miliary tuberculosis, namely, local accumulations of small round cells, with a few giant-cells of the Langenhans type, situated in the thickness of the choroid, and free from pigment. Some of the choroidal tubercles showed more or less central areas of caseation, as evidenced by the absence of defined elements and imperfect or peculiar reaction to such stains as hæmatoxylin, eosin, acid fuchsin, and picric acid. Some of the choroidal tubercles showed vertical or transverse sections of the choroidal vessels, the walls of which had undergone endarteritis.

There were two pathological curiosities about the specimens. In the first place, there appeared to be in places a general infiltration of the choroid with small round inflammatory cells; and, secondly, a few outlying areas of tubercle of the retina were found.

The drawing (Fig. 3) represents a typical tubercle formation in the choroid. A fusiform mass of small round cells occupies practically the entire parenchyma of the choroid between the lamina vitrea, which is intact, and the suprachoroid, which is also preserved. Towards the centre of the tubercle lie six giant cells, the nuclei of which are arranged towards the periphery. It will be noticed that the pigment layer of the retina is in place. A close examination of the choroid beyond the tuberculous formation will convince the attentive observer that the choroid contains a number of small round cells. In other words, in this particular case a kind of general tuberculous choroiditis is present, in addition to the simple deposition of miliary granulomata. A few of the sections showed outstanding nodules of retinal tuberculosis—*i. e.* nodules occurring independently of the choroidal deposits. Fig. 4 represents one of these nodules. It is sharply bounded externally by the retinal pigmented epithelium, here cut rather on the slant. The inner nuclear layer can be traced over the nodule almost in an unbroken layer. The nodule itself is composed of elements almost identical with the neurons of the outer nuclear layer, with which, indeed, it appears to be structurally continuous. No other elements can be recognised in the nodule, a point that at once raises the question whether it is to be regarded as tuberculous at all. Whatever hesitation we might have felt upon this point at first was conclusively laid at rest later by finding a couple of tubercle bacilli in one of the retinal nodules. Tubercle bacilli were also demonstrated in several of the choroidal deposits in more or less close relationship with the giant cells. The anterior part of the eye, including the iris and ciliary body, included no tuberculous deposits.

Comments.—This case illustrates once again a fact that can scarcely be too widely recognised, namely, that by far the most trustworthy sign of acute miliary tuberculosis is furnished by the discovery of tubercles in the choroid coat of the eye. As regards the present case, the progressive wasting, the oscillating temperature, the rapid pulse, the cyanosis, and especially the hurried respirations without adequate physical causes, undoubtedly pointed to acute tuberculosis as the probable underlying disease. The condition, however, could never have been diagnosed with certainty on that slender evidence. The discovery of tubercles in the choroid settled the matter once and for all, in a way that nothing else could possibly have done. Despite recent statements to the contrary, we repeat that tubercle of the choroid is not uncommon. We recall the fact that in a former communication upon the subject ('Reports of the Society for the Study of Disease in Children,' vol. i, 1901, p. 169) we found it to be present in exactly 50 per cent. of the forty-two cases of acute miliary tuberculosis and tuberculous meningitis that we examined with the ophthalmoscope. It is, therefore, not only a certain but also a common sign of the conditions named.

The present case, as we have already said, presents two peculiarities, viz. a clinical and a pathological one. The usual clinical picture of acute tubercle of the choroid, as we have pointed out before (*loc. cit.*), is that of one to three round, oval, or reniform areas, of usually fawn colour, and not sensibly raised, situated near the optic disc and macula lutea. The characteristic lesion, as we then stated, is generally small, single, and limited to one eye. The case just related is therefore altogether exceptional, since the choroidal deposits are present in both eyes, are multiple, and, speaking broadly, are of unusually large size.

The pathological invasion of the retina by tubercle is, in our experience, most uncommon. We have searched through dozens of microscopical specimens, taken from upwards of twenty instances of tubercle of the choroid, without having succeeded in finding this change, except in specimens taken from the present patient. It may be safely assumed, therefore, that foci in the retina in association with miliary tuberculosis of the choroid are anything but common. An even more uncommon finding would be a deposit of tubercle in the retina apart from any choroidal change. Yet such cases have been reported, amongst others, by W. A. Brailey (2), O'Sullivan and Story (3), Sattler (4), and, quite recently, by A. Knapp (5), Spalding (6), and Hancock (7).

References.

1. Jessop.—'Trans. Ophthalmological Society,' vol. xxiii (1903), p. 50.
2. Brailey, W. A.—
3. O'Sullivan and Story.—'Trans. Royal Academy of Medicine of Ireland,' vol. xvii, p. 451.
4. Sattler.—'Von Graefe's Archiv.,' xxiv, 3, p. 227.
5. Knapp, A.—'Archives of Ophthalmology,' vol. xxxii (1903), p. 22.
6. Spalding.—'Trans. American Ophthalmological Society,' vol. x (1903), Part I.
7. Hancock.—'Royal London Ophthalmic Hospital Reports,' vol. xvi, Part II, March, 1905.

THE TREATMENT OF ENURESIS AND POLYURIA BY EPIDURAL INJECTIONS.

By W. T. Freeman, M.D.Dur., F.R.C.S.Eng.,

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The treatment of enuresis and polyuria, both in children and adults, has long been, and is still very often, a difficult thing to carry out with permanently good results. Some authorities condemn all giving of drugs as useless procedure; others praise certain remedies, which are announced as specifics if persevered with. Cantharides, strychnine, the bromides, belladonna, hyoscyamus, and ergot are probably the remedies most often given by the mouth, and if the patient be neurotic, with a neurotic family history, nervine sedatives, such as the mixed bromides, pushed gradually to the extreme limit of dosage, often seem to produce good results. I have had little experience of mechanical treatment applied directly to the neck of the bladder, such as massage by the finger through the rectum, or the passing of a cold sound. Occasionally such treatment appears to have good results, but the procedure in either case is hardly the one to recommend in the case of girls of from nine to twenty years of age, and it is at these ages, and amongst females, that the disease causes peculiar distress. Removal of the clitoris is a barbarous operation, but in one or two recorded instances, where there has been a permanent erection of this organ, the operation has been justified by the results.

Now we come to consider the particular method of treatment which forms the subject-matter of this paper. It is that of epidural injections into the sacral canal, and one which I have been carrying out at the Royal Berkshire Hospital and elsewhere for some months past.

We mean by this, injecting fluids into the space that lies between the periosteum of the vertebræ and the membranes of the cord. There is plenty of room here once you are into the canal, but in the case of quite young children the aperture of admission is small and by no means always easy to find. From the age of nine years and upwards the little operation involved is comparatively easy, and in the older patients can be carried out without the aid of an anæsthetic, but in the younger ones my experience proves to me that the administration of nitrous oxide or ethyl chloride to complete anæsthesia is an absolute necessity.

The value of such injections was at first accidentally discovered, and was for a time carried out under the name of lumbar puncture, and the fluids were injected subdurally, not epidurally. Then it was noted that the fluids seemed to act, not so much upon the spinal cord as upon the nerve-roots of the cauda equina. Acting upon this, Cathelin, a French physician, made experiments by which he proved that he could make injections epidurally and produce as sound results as when they were made subdurally. Thus the operation was simplified and the risks to the spinal cord minimised.

We have to remember, then, that the injections are to be made epidurally and with the object of stimulating the nerve-roots of the cauda equina. As to the *rationale* of stimulating these nerve-roots, the stimulating effects are believed to spread up to the lumbar controlling centre and reflexly to excite its corpuscular elements, and thereby to produce inhibitory changes. The proper functions of the centre in a fair proportion of cases seem to be permanently affected, and the tone of the enervated sphincter to be permanently improved.

In the smaller proportion of cases only partially good results are obtained, and in some cases, perhaps as many as one in eight, the treatment is a total failure.

At first specially prepared fluids were used, but the actual composition does not matter, and normal saline solution is as good as anything for the purpose. Normal saline solution, by the way, injected hypodermically, produces an anæsthetic effect upon the skin. It should be used in large quantities, and as much as two to five or six drachms may be injected upon each occasion, and in obstinate cases ten to twelve drachms may be used. The good results are often obtained after a single injection, but it is wise in any case to repeat it after a day or two. If no good results are obtained after the third or fourth injection it is better to consider that the attempts have failed.

It goes without saying that the syringe, needles, skin of the patient, and hands of the physician should be, previously to the operation, carefully sterilized and cleansed.

So far, although my results have not been uniformly successful, nevertheless no harm has been done, and this pretty well coincides with the results obtained by other observers. The treatment has been carried out most extensively in America, to some extent on the Continent, and to a smaller extent in Great Britain.*

Now as to the technique of the little operation. The injections may be made in the standing position, but I prefer the patient to be on a couch in the ordinary obstetric position, with the sacrum well thrown out. A large syringe is required: I have always used an all glass serum syringe. The needle should be from 1½ in. to 3 in. long. The landmarks are the sacral cornua and the tip of the coccyx. Work up from the tip of the coccyx until on either side of the middle line the sacral cornuæ are definitely made out. The membrane stretching between the cornuæ has to be pierced, and if this be successfully done the needle runs away as it were into space, and the fluid when the piston is pushed home disappears with the greatest ease. Keep in the middle line, and push home the needle in a direction upwards and forwards—acting thus you either enter the epidural space of the canal or you impinge to your disgust upon the bony sacrum. If you do this, withdraw the needle and push it up again, a little higher up or a little lower down. After some experience there is no mistaking the happy feeling of having entered the canal, but—and especially in quite young children—it is very easy to miss the narrow aperture covered in by the membrane. In about one in five or six cases it has been my misfortune to miss altogether the entrance to the space, and this always occurred in quite the youngest children. Both our house physician and myself have upon one or two occasions pushed the needle into the more or less soft structures lying over the sacrum, and this mishap has occurred by not keeping the point of the needle sufficiently pointed forwards as well as upwards, and also not unlikely, looking at the anatomy of the sacrum, by pointing it in a direction out of the middle line.

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* Editorial, "Epidural Injections in the Treatment of Incontinence of Urine," BRITISH JOURNAL OF CHILDREN'S DISEASES, December, 1904, p. 551.

Sometimes a little triangular depression or pit is found in the skin at the posterior end of the cleft between the buttocks; when this is discoverable it is a great aid as the point at which to insert the needle.

If by mistake one gets into the soft (not very soft, by the way) tissues lying over the sacrum the mistake is easily found out, for part only of the fluid is pressed out of the syringe by the piston, and this with difficulty, and moreover the fluid that does get into the tissues distends the skin, and proves at once what has been done.

I recommend no one to lightly undertake this little procedure without at first thoroughly handling the bony sacrum and coccyx and grasping the landmarks, nor do I recommend it to be done without a little practice upon the dead body, followed if possible by what is quite a pretty little dissection. The operation seems so easy, and so it is with a little experience and when the patient is twelve years of age and upwards, but I do not think it is such an easy procedure as some American authorities seem to say it is, anyhow if we are dealing with the younger subjects.

The coccyx in young children is a pearly-looking unossified structure which I have proved might be easily pierced if too powerful efforts were made to push the needle directly forwards, or if the skin was punctured unnecessarily low down.

In spite of this, if in doubt, I think it is best to enter the needle too low down in the cleft of the buttocks than too high up—once above the cornual membrane one is helplessly lost, but the point of the needle may find its way upwards to the proper space, although it was entered just below instead of over the entrance.

Having found it frequently a difficult procedure to enter the epidural space of quite the younger patients, I had a needle of a very small calibre made for me for use in these cases, but I have since discarded it. It was apt to bend, was likely to easily penetrate the softly ossified sacrum, and there was the additional danger of its breaking. A hard steel, and not over sharp needle is the best for the purpose.

At the other extreme of life the cornual membrane hardly exists at all; the membrane is tough and probably semi-ossified or calcified, and the bony lips of the aperture have almost fallen together like the alveolar walls of the sockets when the fangs of a tooth have been long removed. These facts I have discovered when examining the anatomy of the parts in the dead body. I fancy right away through life that the aperture, covered in by this membrane, is of variable proportions, and is no more to be depended upon than is an invariable proportional breadth of the cavity of the nostril.

Thinking that possibly the results of injection might be of a purely moral nature, I had a stiletto made wherewith to simply puncture and enter the space without injecting any fluids. I have had no results from such punctures, good or bad.

Enuresis is said by G. F. Still to have been epidemic in some institutions. This tends to prove that temporarily, at all events, the condition may be of an hysterical nature.

Sheffield, in the 'Therapeutic Gazette,' says "that all cases may be divided into two classes, one due to spasm of the detrusor muscle in those of nervous temperament, and one due to atony of the sphincter in delicate subjects."

It may be interesting to note the methods of treatment of enuresis a generation or two back. On page 581 of Cooke's 'Marrow of Physick,' published in 1765, is a description of the treatment of "Incontinentia Urinæ, commonly called 'Pissing in Bed.'" He says that children have oft been cured with fryed mice, stones of a hare burnt, snails, shells and all burnt. Those elder may purge with phelegmagogues. He also recommends the pouder of a live toad burnt in a new pot, and hung about the neck in a bag. Then he says, are also good, sow's bladder, and burnt ashes of an hedgehog; but above all is pudenda suilla.

As far back as 250 years ago it is evident that incontinentia urinæ taxed severely the ingenuity of the physicians of those days.

NOTES OF CASES.

Mary H——, aged 21 years. Worse during night, but has occurred frequently also during the day. At the end of December, 1904, and again on January the 7th, 1905, large injections easily and successfully made without an anæsthetic. On February the 25th she reported herself as cured since last injection.

James F——, aged 13 years. Nightly wettings as long as the mother can remember. January the 23rd, 1905, injection. February the 1st, report, twice since last injection; injected again. February the 15th, report, not happened since last injection. March the 18th, report, no further trouble.

March, 1905, a neurotic woman, aged 32 years, just about to be married. Trouble night and day for past two or three years. Frequently at night; and she gave us an ocular demonstration of how agitation during the day affected her. The injection given with great ease. A week later she reported no further day trouble and lessened frequency at night. I wanted to inject her again, but she apparently considered herself now fitted for her marital duties, expressed her thanks, and departed, and is married.

A. E. L——, male, aged 7 years. On and off day and night from infancy. Injections given on January the 18th and 21st. January the 28th, now occurs only twice a week, previously every day or night. Gave further injection, and repeated it on February the 11th. February the 18th, report, not happened since January the 28th. March the 4th and 18th, similar reports to that of February the 18th.

F. B——, female, aged 10 years, trouble on and off for four years. Injections January the 4th, 7th, and 14th; result good. February the 11th, cure remains. February the 25th, relapse; same date another injection. March the 20th, report, no further relapse. A later report also good.

G. L——, female, aged 10 years. Two years' history night and day. January the 14th, injection; result 50 per cent. improvement. February the 4th and 18th, injections; further improvement, but case not cured. February the 18th, injected large syringeful. March the 25th, report, not happened since.

A. P——, female, aged 13 years, trouble for some years. Subject of arrested Pott's disease. In January gave two injections without the aid of an anæsthetic. Was unable to inject but small quantity of fluid. February the 15th, injected ℥viij under ethyl chloride. February the 25th, mother reported no trouble since last injection. Same day gave another injection with difficulty. March the 18th, report, the case has relapsed.

E. S——, female, aged 9 years. In December an injection without any anæsthetic. January the 14th, further injection without anæsthetic. The report on January the 14th was that it had not happened again. March the 18th, once since last injection. On March the 18th I intended to give her another injection, but using a fine badly-tempered needle broke it and left it *in situ*. It was subsequently extracted by the house surgeon and no bad results came of it.

V. L——, female, aged 8 years. Troubled night and day for a year. From January the 14th to January the 28th three injections given with no good result. It was very difficult to inject but a small quantity of fluid. Later gave one more injection not very satisfactorily. The treatment failed.

In February of this year I also gave two injections, large ones, and with complete success to a girl aged 19 years. She reported herself as cured from the first injection, but I have heard nothing more from her since about the middle of March.

I am just commencing to treat two other patients, and I think the success of the treatment warrants perseverance. It is certainly not uniformly successful, but the results nevertheless appear to me to be better than those obtained by any other treatment, and with improvement in the technique of the little operation may show still fewer failures.

So far I should say that males are more amenable to the good effects than are females, and that the older the patient the more quickly are the good results produced. Occasionally, like other methods of treatment, it fails completely, and with young children it requires considerable practice before the procedure can be properly carried out.

SCALP ISOLATION AS A NEW TREATMENT FOR SCHOOL RINGWORM.*

By David Walsh, M.D.,

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Ringworm is essentially a school disease. Not only is it highly contagious, but owing to the peculiar ways of children it is extremely liable to be conveyed from one to the other. By some mysterious law of nature the playful exchange of caps seems to be a never-ending source of amusement to children. In addition to being highly contagious, ringworm is, generally speaking, a lingering and rebellious complaint. The majority of cases may be cured by skilled treatment within six to twelve months, while others take two or three years or more. In one case mentioned by Aldersmith, the disease lasted for no less than seven years. Ringworm, moreover, is often difficult to detect, and unrecognised and unsuspected cases are always found in investigating school outbreaks. It is no less difficult in many instances to say when a case is definitely cured, and many children are sent by their parents back to school with the disease in an active condition, after having undergone a short course of treatment at a special hospital.

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* Paper read in the Section for Child Study and School Hygiene, London Congress of Public Health, July the 21st, 1905.

From the foregoing facts it follows that ringworm is a serious malady, especially when we take into consideration the interruption to education that is involved under existing conditions. No responsible medical man could sanction the attendance at school of a child suffering from ringworm. As a matter of fact the disease is common among Poor Law and Council and Board Schools, whereas it is comparatively rare in the private and public schools of the wealthier classes. This shows that the prevalence of ringworm is mainly a question of environment. Indeed, were it not for the merciful dispensation of Providence, which ordains that ringworm practically dies out at about 15 years of age, the complaint would be more or less universal at all ages among the poorer classes of the United Kingdom.

In spite of the difficulties that surround the problem of prevention there nevertheless underlies all our investigations the comforting conviction that ringworm being a preventable disease it will some day be surely prevented.

One of the chief obstacles in dealing with ringworm lies in the fact that hitherto no method of rapid and certain cure has been discovered by medical science. A host of remedies have from time to time been vaunted as "certain cures" for the disease. Among these may be mentioned chrysarobin, glacial acetic acid, blistering, thymol, salt, croton oil, metallic oleates, biniodide of mercury, formalin, tincture of iodine, the X rays, and many others. In spite of the long list of remedies no royal road to the cure of ringworm has yet been found. All of the remedies mentioned will cure some cases rapidly, but none of them will cure all cases, while in a few instances all of them fail altogether. In practice, remedies may be divided into those which act by virtue of their direct germicide powers and those that act indirectly by exciting a reaction in the surrounding tissues. The new method shortly to be described aims at a combination of the direct and indirect methods, with a local means of isolating the actively contagious scalp.

In the Metropolitan Poor Law Schools the ringworm children are now classified and kept apart in special schools, where treatment can be carried out without interfering with education. In the County Council and elementary schools of the United Kingdom isolation of that kind would be impossible. The only alternative plan of ridding those schools of the disease under existing methods would be to exclude all affected children from attendance by skilled medical inspection. As Aldersmith points out, such exclusion would in the majority of cases mean practically the loss of the whole school life. The prevalence of ringworm in some County Council Schools must be simply appalling, if we may judge from the numbers of such children brought for treatment to special hospitals for diseases of the skin. It is impossible to get exact statistics. In 1894 Aldersmith and Abraham examined about 600 children from two London Board Schools, and found only 3 per cent. suffering from ringworm. That percentage, however, can hardly be accepted as representing the average prevalence in such schools, for Aldersmith, between the years 1887 and 1896, rejected 4·3 applicants to Christ's Hospital, a middle class school, on account of ringworm. Moreover, when an outbreak occurs in a public school of the higher class, more than half the scholars have been often attacked. Now that a medical officer has been appointed to supervise the County Council scholars, exact details as to prevalence will shortly be forthcoming. Dr. Ker, however, has not held the office in question long enough to be able to furnish those particular statistics. As things stand, affected children are treated either at home by private practitioners or at hospital. In either case the parents are required to produce frequent medical certificates of exemption to the school attendance officers. The result of this pressure and of the ignorance of schoolmasters and of school attendance officers no less than of parents is that many of the children are sent back to school in an uncured condition, where they once again become active centres of infection.

Medical authorities are agreed that every case of ringworm, however slight, should be at once isolated. Surely, in face of that opinion, it becomes the bounden duty of the London County Council and all other education authorities throughout the kingdom, not only to weed out cases of ringworm from their schools, but also to take every possible precaution to prevent affected scholars from returning.

Yet the problem of how to deal with school ringworm, although beset with difficulties, is not without a ray of hope. Although we cannot isolate school children suffering from ringworm, it is nevertheless possible to isolate their scalps. The mountain may not come to Mahomet, but Mahomet may still go to the mountain. It stands to reason that if we can encase the shaved scalp in an impervious envelope or cap we shall, for the time being, prevent the spread of infection from that particular scalp.

The method may be described in detail somewhat as follows:

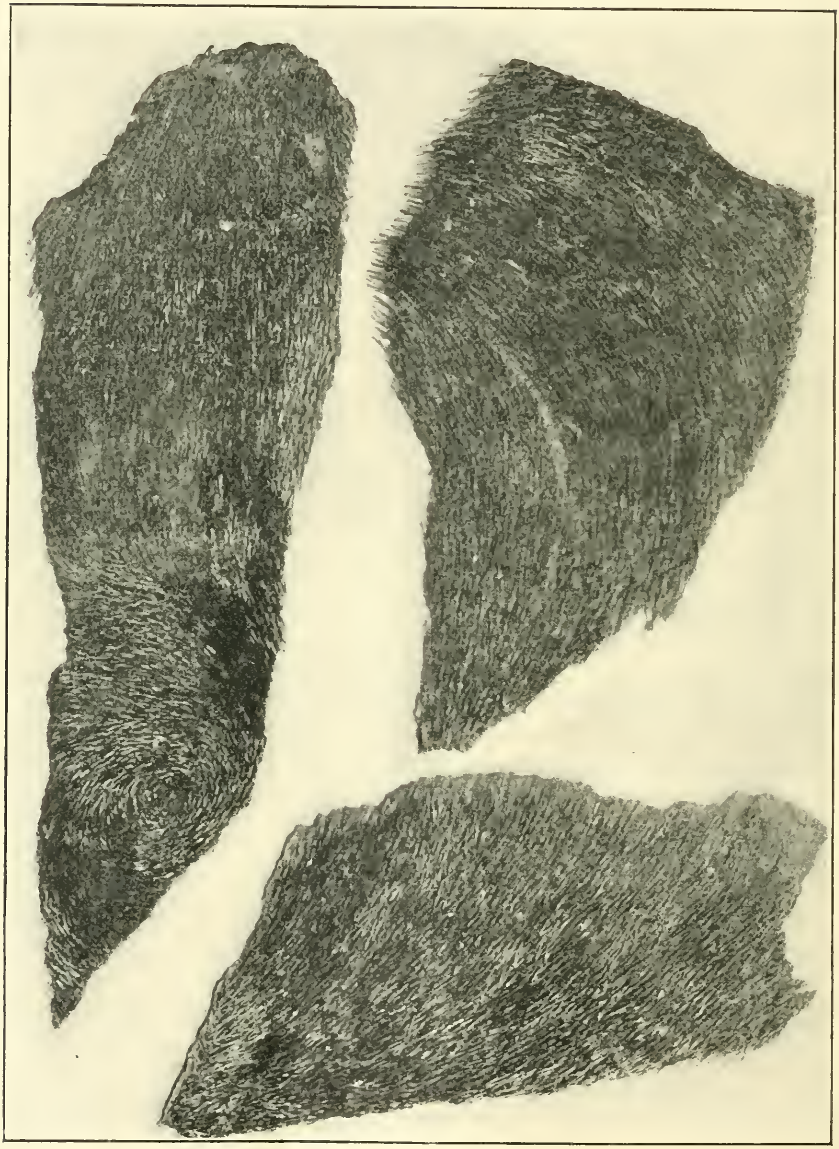
The scalp is first shaved, no matter whether there be one patch of ringworm or many; it is then rubbed with turpentine, washed with soap and water, and dressed thoroughly with a germicide, such as a weak solution of formalin or sulphurous acid. It is then exposed to the X-ray tube for ten minutes, and finally painted with several coats of a 10 per cent. solution of salicylic acid in flexile collodion. X-ray exposure, however, is not indispensable, and a mild irritant remedy may be substituted. In the next few days a fresh coat of collodion is applied, especially if there is any tendency to crack in the film or collodion-cap. If desired the cap-film can be strengthened by a coating of rubber solution, by Unna's zinc gelatin, by fastening on a thin layer of cotton wool or by strips of rubber adhesive plaster. After a week or ten days the whole cap-film is forced up the eighth of an inch or so from the scalp by the growth of the healthy hair. The loosened film can then be gently stripped away bearing on its under surface the firmly adherent stumps alike of diseased and of healthy hairs. In short, a wholesale depilation has taken place, especially if the X-ray dosage has been accurately administered so as to loosen the hair bulbs. The cap-film, if it cannot be stripped off without causing too much pain, may be made easier of removal by inserting a pair of curved scissors between the film and the scalp and snipping through some of the hairs. The shaggy under surface of the separated cap-film is remarkable (see illustration, p. 362). The ringworm hairs are twisted and irregular, as when they were on the scalp, and some of them are often turned white presumably by the action of the ether in the collodion. The process may be repeated as often as may be deemed necessary. In cases where large areas of scalp have been denuded in this way the hair has later grown again vigorously, so that there need be no fear of permanent baldness.

Collodion is somewhat costly, but no doubt many cheaper substitutes, such as rubber solution, could be found.

The essential points about this new method are the general depilation of the scalp after the hair bulbs have been loosened by exposure to the X-ray tube by means of a cap-film of some adhesive substance, whereby isolation of the infectious scalp is at the same time effected. Various experiments show that it will be easy to contrive cheap and efficient substitutes for the collodion film.

The advantages of the combined cap-film method of treating ringworm are the following:

(1) Infection of other children is prevented by isolation of the individual scalp.



Hussey's case (*microsporon*); diffuse chronic ringworm; several years' duration. Portions of collodion cap-film showing adherent hair-bulbs (diseased and healthy), stripped off almost painlessly ten days after treatment with X rays, June the 10th, 1903.

(2) Cure is hastened by the depilation of diseased and of healthy hairs.

(3) The depilation of diseased stumps is effected by an extremely slow but powerful traction upon a bulb loosened by the application of the X rays or by some mild irritant remedy.

(4) The method combines direct and indirect curative measures with isolation.

(5) The X rays, if wished, can be applied through the cap-film.

(6) The children affected with ringworm can attend school if their scalps be thus isolated.

(7) Treatment need not be applied oftener than once every week or ten days.

In conclusion, it may be remarked that under this or any other plan success in stamping out school ringworm can be attained only by the help of skilled and systematic medical inspection. Without such aid it would be impossible either to detect cases, to treat them properly, or to say when they are cured. The special cap-film treatment would have to be carried out, say, in London at a central station under the control of a medical man experienced in ringworm cases. Its chief claims are that while it materially shortens treatment it effectually prevents the spread of infection and permits the education to go on unchecked. The London County Council will doubtless rise to the occasion and before long organise a method of ridding their schools of ringworm. It may safely be predicted that sooner or later public opinion will insist upon the adequate and scientific treatment of this preventable evil that now scourges the juvenile population of the United Kingdom.

THE HIGH INFANTILE MORTALITY RATE, THE FAR HIGHER INFANTILE DETERIORATION RATE, AND THE MEANS TO CHECK THEM.*

By George Carpenter, M.D.Lond.,

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The Registrar-General's returns for 1904 show that the average death-rate for the seventy-six great towns of England and Wales was 17·2 per 1000, while the infantile mortality rate of children in the first year of life was 160 per 1000 births. In 142 other towns it was 154 per 1000, and for rural England and Wales 125 per 1000. Certain other large towns showed a still higher rate; thus Birmingham was 197; Liverpool, 196; Stockport, 203; Hanley, 212; Preston, 218; and Burnley, 229.

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* An address delivered at the London Congress, Royal Institute of Public Health Section Child Study and School Hygiene, July, 1905.

In London the highest borough rate was that of Bermondsey, which was 172, and the lowest was Marylebone, with a total of 94.

The infantile mortality rate in the various wards of Birmingham has been shown to be no less than 331 for St. Mary's, and 263 for St. Bartholomew's, the best being 133 for Edgbaston and Harborne, and there is reason to believe that selected districts in other large towns would show equally startling figures.

Of provincial towns Bournemouth was 111; Hastings, 108; King's Norton, 100; and of London suburbs Willesden, 114; and Beckenham with the low general death-rate of 9·1, was no less than 126.

There can be no question from a study of these startling national statistics that the infantile death-rate is excessive, and a standing menace to the country. Further, this waste of infant life is a class mortality—it is practically confined to artisans and the labouring classes, and does not exist to any serious extent in the upper and middle classes. Although in the upper and middle classes infantile lives are not in such jeopardy, the infants born to these classes are very prone to diet disorders and suffer thereby through life from lack of vigour—physical wrecks in sequence to readily preventable conditions. During the past decade the birth-rate in the United Kingdom has steadily diminished. Had it not been for the alien immigrant the actual population of England would have decreased.

The infantile mortality question is one, therefore, of extreme importance, not only in relation to the growth of the population, but in regard to the physique of the nation. While thousands perish outright, hundreds of thousands who worry through are injured in the hard struggle for existence and grow up weaklings—physical and mental degenerates. A high infantile mortality rate therefore denotes a far higher infantile deterioration rate, and this unwelcome fact must not be lost sight of.

Of all the causes, and they are numerous, which lead to this large sacrifice of infant life, and to the undermining of infant physique, food is the most important.

Improper feeding is mainly responsible for infantile deaths and disease. Three fourths of the deaths of children under 12 months of age occur among those who are bottle-fed.

This enormous mortality and widespread production of disease can be largely prevented by breast-feeding, and failing maternal nursing, by the use of *pure* cow's milk in suitable dilution.

Of the two methods, the former, or Nature's method, is the only one that can be recommended. The latter is to be viewed merely in the light of a makeshift.

The large majority (75 per cent.) of mothers are capable of nursing their children, though in the upper classes the percentage that perform these maternal duties in this respect is very small indeed.

Von Bunge, of Bâle, asserts that a deficiency in maternal milk is due to the imbibing of alcohol by the parents. His statistics, drawn from all Europe, show that women with an insufficient supply of milk are usually the daughters of alcoholics. He asserts that if two generations have been alcoholic the women of the third generation will almost certainly be unable to nurse their children. The importance therefore of alcoholic temperance in indirect relation to infantile mortality is obvious.

A number of poor women, by reason of their having to find employment in mills, factories, warehouses, and elsewhere, are unable to nurse their children, and certain others fail in this respect owing to ill health and lack of sufficient nourishment. The Factory Act provides that a woman shall not be employed within four weeks of childbirth. To insure the carrying out of the Act, *ten* ladies are employed throughout the United Kingdom. Comment is not necessary. It would be a great source of protection to infant life and health if suckling mothers were not allowed to leave their infants to follow their employments. Women who can nurse should be encouraged to do so, for therein lies the secret of a healthy and peaceful infancy and a vigorous childhood and manhood. Steps should be taken to impress upon mothers the importance of performing these maternal duties for the sake of their own health as well as for that of their offspring. They must be taught that breast milk is the proper food for the child, and that there is no substitute for breast milk. The term "humanised milk" should be abolished; mothers are misled thereby, and are apt to assume that "humanised milk" is just the same and just as good as breast milk, and that it can be used in the same way.

To popularise maternal nursing among the poor, it would be well to institute local charitable societies for the award of prizes to the most successful mothers and for the payment of gratuities, or for the provision of nourishment where necessary to enable mothers to properly carry on their duties. The societies would also, through their medical officers, look after the health of mothers during lactation, and would instruct those about to become mothers as to the best way to preserve their health during pregnancy and to bring forth healthy offspring at term.

Where breast-feeding is impossible or can only be partially undertaken the rearing of the infant by artificial methods becomes necessary, but not until then. For this purpose cow's milk is the substitute.

The bottle-fed infant requires *pure* uncooked cow's milk, suitably diluted according to its age, and it should be the aim of municipalities to provide nurslings and others with a commodity which is above suspicion, and not with a product so filthy that sterilisation becomes imperative.* Certain municipalities, following the lead of the Societies of the Gouttes de Lait of France—to wit, Liverpool, Battersea, Leith, St. Helens, Glasgow, and others—recognising their duties towards the infant population, have endeavoured to reduce the infant mortality rate by supplying sterilised milk at milk depôts. While one cannot but applaud their noble efforts in aid of suffering infantile humanity, one cannot but feel that their methods are faulty. From the financial side they have not as yet proved remunerative, as they are not very popular. So far they appear on paper to have been fairly successful in their aim—the reduction of infant mortality. Thus, the mortality rate of the depôt-fed infant appears to be decidedly less than that of the general infantile mortality rate of the towns in which the depôts are situated. The numbers are, however, too small to draw any reliable deductions therefrom, and there are other fallacies.

There are two great objections to milk sterilised at the depôt. One of them is that boiling milk does not destroy the poisonous products which the bacteria have produced in transit, though cooking is inimical to the microbes. The other objection is that milk so treated is apt to produce scurvy, anæmia, and malnutrition in the nursling. In May, 1904, of the BRITISH JOURNAL OF CHILDREN'S DISEASES, in an Editorial under the heading of "Municipal Milk Supplies," it was pointed out that sterilizing, humanizing, etc., are means employed by medical men for special reasons and for a limited period; but they produce such changes in the milk that their employment on a large scale and apart from medical advice is not justifiable. Further it was stated: "We have the greatest respect for the medical officers of health in this country when carrying out their own work, but the feeding of infants is rather outside their sphere and is a branch of medicine in which few of them have had any special training or experience. Their statistical results as to feeding by municipal milk form most interesting reading, but we are not prepared to accept them as finally settling problems which have exercised and are still exercising all the skill of specialists in diseases of children. The effects of a dietary on a large number of infants can only be correctly estimated by those who have the children directly under their own observation. Statistics as to the death-rates of infants fed on municipal milk, and others not so fed, are practically worthless because so many unknown factors come in."

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* *Vide* Editorial, "The Milk supplied to Infants," BRITISH JOURNAL OF CHILDREN'S DISEASES, February, 1904; also Editorial, "Milk Dispensaries for Children's Hospitals," *ibid.*, March, 1904.

Municipalities have a great work before them, viz. the stiffening of the present regulations under which milk is produced, carried by cart and rail, and stored and delivered to the customer. The speedy formation of some central authority—a special Government Department—is required to formulate stringent regulations and to efficiently control the milk trade of the country.

From the time the milk leaves the ill-kept cows and its passage over the manure-begrimed hands of the milker until its arrival at the customer's dwelling it receives but scant attention saving that of the unscrupulous dealer, who, by various injurious chemical adulterations—boric acid and other deleterious drugs—retards decomposition for a time.

Regulations are required to compel—

(1) The grooming of milch cows, the keeping of their bodies sweet and clean, and ablutions of their teats and udders before milking.

(2) The suitable feeding of milch cows.

(3) The proper stabling and bedding of milch cows.

(4) Cleanliness of cow tenders and milkers and the suitable clothing of the latter when milking.

(5) The aseptic conduct of milking operations.

(6) Suitable treatment of the milk during and immediately after milking.

(7) The subsequent transference of the milk to suitable glass or other stoppered receptacles, and the appropriate treatment of these receptacles when not in use. Investigations recently undertaken by Dr. G. H. Steward, of the Philadelphia Bureau of Health, show that specially prepared paper bottles can be used with advantage for this purpose. Bacteriological tests showed that the milk in the paper bottles contained fewer bacteria than that in the glass receptacles—on an average about one fourth—and the milk kept sweet two days longer. The cost of the bottles is trifling and the price of the milk is not increased by their use, and when emptied they can be thrown away

(8) The better and more rapid transit of bottles of milk to and by rail in refrigerator vans and the speedy abolition of the milk-churn.

(9) The storage of milk in stoppered bottles on ice or in specially chilled receptacles in the milk-shops.

(10) The delivery of chilled milk to the customers in stoppered bottles by special refrigerator carts.

(11) The municipalities, in addition to the ordinary methods of chemical analysis, should undertake frequent bacteriological examinations. The number of microbes per cubic centimetre should be estimated, and also the percentage of lactic acid in the milk, so as to control not only obvious additions and subtractions, but also the methods of collection as regards cleanliness.

(12) Increased powers are required to enable milch cows to be tested by tuberculin.

(13) The dispensing at the farm, under municipal control, of uncooked milk in simple dilutions of appropriate strength for infant feeding, according to age, to be placed in stoppered bottles, each bottle to contain sufficient for one feed, and a suitable number of bottles to be supplied for the day's consumption, and packed in appropriate wicker baskets or other receptacles. Printed instructions, in simple language, in regard to infant feeding should accompany the baskets.

(14) To prevent the abuse of the municipal milk depôt and the encouragement of bottle-feeding the milk should be supplied to the customer only on a doctor's order.

It is important that provision should be made for the municipal-milk-fed infant to be reared *under medical guidance,* and that the progress made by the infant should be registered weekly, so that its feeding can be scientifically controlled and be modified whenever necessary and its health be supervised. Municipalities should not seek to make themselves responsible for infant feeding, in regard to which they possess no qualification, but rather should they devote their attention to the provision of a *pure* commodity—a necessity for young and old alike.

To obviate the milk depôt being turned into an Out-Patient Department, arrangements might be advantageously made with the children's hospitals or other hospitals to undertake the work of the depôt for the localities in which they are situated. This plan would insure skilled medical attendance by recognised children's specialists and would help to popularise the movement. The sanitary and financial control would remain in the hands of the public health authorities as at present and the medical arrangements would be supervised by those who are best able to advise in such matters. Such a system would prevent friction with hospital authorities and local practitioners and would prove a very powerful combination for good. This plan would give the children's hospitals an opportunity of obtaining that for which there is so great a need at present—a *pure*, wholesome, uncooked milk.

The present system of administering out-patient relief at the children's hospitals and at other hospitals where infantile disorders are treated is unsatisfactory.

The infantile mortality rate of those attending these departments is large, and this is the case because it is most difficult, for a variety of reasons, to carry out a treatment on these patients.

The majority of the infants are brought for dietetic disorders. The physician readily detects the nature of the ailment and suitably prescribes, but the power to assist mostly ends there. If the illness be due to dietetic errors, the mother is given a paper of instruction along with a prescription. The directions for feeding are good, but the giving of the paper to the mother is not sufficient for the end in view. The bottle of medicine is considered the most important outcome of the hospital visit; it is tasted and sampled with approval or the reverse by the mother and her acquaintances, but the printed instructions are crumpled up and often mislaid before the hospital precincts have been left. In these cases, to be able to prescribe a suitable clean milk mixture would be a great boon to the doctor as well as to the infant.

A year or so ago I advocated the creation of milk dispensaries (*vide* "Milk Dispensaries for Children's Hospitals," BRITISH JOURNAL OF CHILDREN'S DISEASES," March, 1904) for the dispensing of pure milk and pure diluted milk in connection with the children's hospitals, particularly in association with the North-Eastern Hospital for Children, Hackney Road. The House Committee of the hospital and their chairman (Mr. C. J. Port) favourably viewed the idea. The difficulty of obtaining a *pure* milk was quickly discovered when the matter was gone into and the leading dairies were visited; and there was some hope when this state of affairs was recognised that the hospital, either alone or in combination with other similar institutions, would be able to manage a dairy-farm on the most approved modern principles for the supply of milk. Lack of funds for the purpose and important building works on hand prevented the fruition of the scheme, and the infantile out-patients are still in want of a prime necessity for their successful treatment, viz. *pure milk*. It was proposed that milk should be paid for by those patients who could afford to purchase it, and that it should in deserving cases on inquiry by the almoner be supplied below cost price.

In connection with the children's hospitals there should also be some system whereby the treatment of out-patient infants could be carried on at their homes. Such a plan would preserve many infantile lives to the nation, and improve the national physique. An efficient visiting nursing staff for local cases is a necessary part of a children's hospital equipment. The nurses' duties would be to superintend the carrying out of the physician's directions, and to give practical instruction in simple hygiene and the domestic duties incumbent on women and mothers. These nurses should be required to have been thoroughly trained in a children's hospital, and to be well grounded in all domestic duties.

They could either be in the hospital employ or their services, if in the future a municipal milk depôt is to be a part of a children's hospital equipment, might be obtained on application to the municipal authority in whose pay they would then be. For the creation of a thoroughly efficient service such nurses ought to be under the immediate control of a hospital-trained matron, and act under the direction of the medical staff. This latter I look upon as most important. To encourage the creation of a number of special district nurses, lady sanitary inspectors, lady health visitors, call them what you like—and I have in mind Huddersfield and other provincial towns and metropolitan municipalities where such appointments have been made—responsible to none but themselves for the advice they give, will be but the making of a superior race of "Gamps" and in the end prove quite as objectionable. As long as these women confine their attentions to carrying out the doctor's orders, they will prove of great usefulness. Emancipated from the only real sources of restraint, the doctor, the temptation to give medical advice will soon be yielded to, and with disastrous results to the community. Municipalities would exercise some restraint over these creations, inasmuch as they would be in their pay and subservient to their rules, but there would be no real restraining influence in such circumstances, and it is hoped that public health authorities will see to it that the public is properly safeguarded in respect to such appointments.

By such means as I have outlined appropriate nourishment can be brought within reach of the humblest nursling. But there are various difficulties other than the food question to contend against.

One of these is to get in touch with as quickly as possible recently delivered women. It is important that the public health authorities should obtain early intimation of the births occurring in their districts.

According to the present law births need not be registered for six weeks or more after the event, by which time many infants have succumbed. An alteration in the law is therefore greatly needed.

Huddersfield Council has endeavoured to solve the difficulty by offering a shilling reward to the first person who notifies the birth of a child to the Medical Officer of Health within forty-eight hours of the event. On receipt of the notification the parents are supplied with full instructions as to the feeding, washing, clothing, etc., of infants. Two lady visitors have been appointed to visit the homes of the women to reinforce the printed instructions by a personal interview. Glasgow has copied Huddersfield's methods.

For mothers who have to work away from home the provision of crèches, or day nurseries, under medical supervision, is a necessity. These were first established in France in 1844 by private enterprise; but now they have been taken over by the French municipalities, and children are fed and cared for there at a trifling daily charge, the mother having the right of admission at any time. Not only are these common in France, but they are to be found in the majority of continental cities. There are now some 55 crèches under medical supervision in London, managed by private bodies or individuals, but some of the largest and poorest districts in the metropolis are unprovided for, or lack sufficient accommodation to meet the great demands made upon them. The need for crèches is now being realised by a few municipalities in London and the country, and powers will be sought in the near future by these corporations to legalise the formation of these very necessary institutions and to financially assist those already formed. The Acton Urban District Council recently applied to Parliament for power to maintain one or more crèches, but the application was refused on the ground that it was a novel proposition from a legislative point of view. A valuable suggestion has been made in regard to these institutions—that they should be made educational centres, and that girls of over 14 might be made to attend occasionally, and the teaching of infant management to such girls should be eligible for aid from the grant for public education.

For mothers who live at home domestic education is all-important. Women who have had no domestic training, who, reared in squalid homes, have spent their lives in factories and shops, who are unacquainted with simple health rules, who have had no experience of marketing, who are ignorant as to the proper storage of food, who are incapable of undertaking simple cooking, who are not thrifty, tidy, cleanly, and resourceful, cannot make good wives or mothers.

Good mothers are necessary for the reduction of infant mortality and for the production of a healthy race, and it is on the women that time and money must be spent to bring about the desired result.

How are the women to be approached? There are various channels, such as municipal lady health visitors, municipal classes of instruction, crèches, various religious bodies, the out-patient departments of hospitals, and workhouse nurseries. From a prolonged study of out-patient mothers, I consider that *practical demonstrations* are all-important. I have no faith in set lectures which are wearying to the majority of educated people, but how unutterably boring to the superficially informed and to those of less acute intellects. The dissemination of knowledge by printed matter is productive of but slight good among the poorer classes. For some years in the annual reports of the Medical Officer of Health for the Urban District of Beckenham I have annually specially called attention to the excessive infantile mortality rate of the district and the plan to prevent it. Steps have been taken by the press to diffuse this knowledge in the district, but the results have been barren and the high infantile mortality rate shows no abatement. A striking advertisement will readily attract them, but the exercise of a trifling mental effort to abstract information from even carefully prepared literature is rarely undertaken, and need not be expected. In education let us return to the three Rs. principles associated with a high domestic standard of instruction.

Elementary hygiene, domestic duties, marketing, cooking, thrift, orderly methods, needlework, the care, the feeding, the clothing, and domestic hygiene of infants should be practically taught to every schoolgirl. A school was opened in January, 1904, at Harringay, for the instruction of girls between the ages of ten and thirteen in housekeeping, and there is a great need for similar educational establishments in other districts. Not only should girls be taught the domestic virtues in our public schools, but boys should be trained in all the essentials that produce good citizens and good fathers—respect for parents, cultivation of the natural affections, the love of home and country, duty to one's neighbour, personal cleanliness, obedience and decent behaviour and the leading of well-regulated healthful lives.

Of social evils that make for untold misery in the home and pave the way for infant mortality, betting by the fathers and alcoholism in one or both parents take a prominent place.

Carelessness and neglect on the part of parents and infant guardians are deserving of punishment, and fatalities arising in sequence to these should receive greater attention by the coroners than at present.

Infantile life insurance should either be abolished or more strictly safeguarded; the present system is a premium on infant murder. A law has recently been passed in France which prohibits the insurance of children's lives under 12 years of age, an enactment which could be added with advantage to our statutes.*

The workhouse nurseries which exist throughout the country and which annually minister to a multitude of infants and their mothers, offer exceptional facilities for the diffusion of knowledge in regard to infantile dietetics and management. From a leading article which appeared in the BRITISH JOURNAL OF CHILDREN'S DISEASES, entitled "The Care of Infants in Workhouses," † it would appear that these unique facilities are ignored, and that the average medical officer cares little as to how the young children in the workhouse are fed, and is wholly apathetic as to the effect of his remissness on the national welfare. These nurseries are badly ventilated, cots for infants are condemned, overlying being encouraged thereby, and it would appear that the medical officers very rarely carry out the dietary order of 1900 of the Local Government Board, which includes a special proviso directing that the "medical officer" of the workhouse shall give directions in writing as to the service of food to the infants.

The relationship of proprietary foods to infant mortality is not unimportant. At present these preparations are responsible for the loss of many infant lives and for much child suffering and deformity.

In a recent issue of the 'Daily Mail' there was an advertisement issued by a West End firm of chemists—chemists to the King they state—headed "Fine healthy children: An article of the greatest possible interest to mothers showing how to build up the body, brain, and muscle." The proprietors at great length point out that the future of the child largely depends on the food given during the first few months of life. They go on to state that their food is "the very best food you can give baby." Further, "a booklet will also be sent which is a guide to infant feeding. . . ." Their food, like many others, bulks largely in unaltered starch. This is not an isolated instance and is taken haphazard from current literature; the advertisement columns of the public Press are full of such appeals to ignorant mothers.

Needless to say the opinions of financially interested proprietary food vendors on the subject of what is the very best food you can give baby are not always in harmony with those of the experts—the children specialists—whose knowledge has been laboriously obtained by extensive clinical experience, and has been preceded by prolonged medical training.

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* "Child Life Insurance," BRITISH JOURNAL OF CHILDREN'S DISEASES, February, 1905.

† June, 1904.

Lying-in women, whose maternity is announced in the usual columns of the daily press, are speedily inundated with a variety of articles for the baby by philanthropic tradesmen with an eye to the main chance, the most prominent being proprietary food samples and their accompanying literature.

Not content with appeals to an ignorant public by such means, these pushful proprietary food traders bombard the letter-boxes of the profession with pamphlets on infant feeding, and innumerable samples of their wares rattle into these receptacles with surprising regularity, and with unbounded impudence their brazen travellers seek personal interviews with the physician during his consulting hours to push their goods and *inter alia* teach him his profession. That such devices are considered to be worth the outlay incurred is a poor tribute to the knowledge and intelligent interest displayed by the bulk of the medical faculty on the all-important subject of infant feeding.

The advertisement columns of another paper, the 'St. James' Gazette,' recently pointed out in large type "How infantile mortality may be controlled." The ingenious solution of the problem is provided by the answer "Knowing the exact composition of Woodward's Gripe Water, I can with confidence recommend it" a well-known London physician, name given privately. If I may offer a suggestion, a better solution than that would be knowing the source of the milk supply and its treatment, and the abolition of proprietary foods for young nurslings. There would certainly be fewer infantile stomach aches.

The specious advertisements of the vendors of proprietary foods —and without extensive advertising the commercial life of these preparations would be of short duration—attract the ignorant, and, failing repressive measures by the Legislature, means should be adopted to instruct parents as to the harmfulness of these products when given to very young nurslings.

A French law forbids anyone, under the threat of heavy penalties, to give infants under 1 year of age any form of solid food unless ordered in writing to do so by a qualified doctor. Some such law in this country would prove of great service and would restrain the attentions of the ignorant and foolish who thrust into the mouths of infants to their great detriment such articles as carrots, gin, bacon, beer, pudding, tea, cakes, and meat.

Another factor in infantile mortality is not infrequently the extreme poverty of the parents; the expenditure for milk in some instances is not more than one penny a day, and I have known it to be as low as half that amount. An infant, of course, cannot thrive on such a meagre allowance, and properly administered *outdoor* relief should in such cases be given to the mother and should carry with it the knowledge that the doctor can be consulted should the child fall ill.

Medical students should be taught children's diseases and infantile disorders at the children's hospitals and undergo an examination therein before obtaining their diplomas. They should not be allowed, as at present, to practise the medical profession without having made themselves thoroughly acquainted with the care and treatment of infants. That our future medical practitioners should be so educated that they will be in a position to give sound medical advice to the public on infantile and childish ailments is most important.

It follows therefore that the reduction of the present high infantile mortality rate is a complex social problem, and demands the adoption of a variety of remedial measures and the hearty co-operation of all classes of the community to bring about a successful result.

The perils at man's hand that beset the infant to rob it of life and health from its advent into the world are numerous and deadly.

Infant life and infant health are national assets of far-reaching importance—how important to England in the future no man can foresee. Has not the time arrived for the Legislature to prescribe appropriate remedies to safeguard its future citizens, wealth-producers, and protectors?

The Society for the Study of Disease in Children.

The Annual Provincial Meeting of the Society took place at the Hospital for Children, Sheffield, on June the 17th, under the chairmanship of Dr. C. H. Willey.

Cases and specimens were shown by Dr. Willey, Dr. C. N. Gwynne, Dr. J. H. Wilks, Mr. Simeon Snell, Mr. S. E. Morton, Dr. H. Leader, Dr. Arthur J. Hall, and Dr. J. G. Emanuel.

A Case of Osteomyelitis and Suppurative Pericarditis in a Girl, aged 7 Years, successfully treated by operation in 1903, was recorded by Dr. C. N. Gwynne. The femur and radius were affected. Incisions were made and were followed in three days by parotitis and pericarditis. Ten days later the pericardium was laid open and about ten ounces of pus were evacuated. A tube was inserted and removed on the tenth day. In spite of further pyæmic complications the child recovered. The heart now showed some hypertrophy.

A Case of Tubercle of the Choroid and Retina in a Girl, aged 3 years, was reported by Dr. George Carpenter and Mr. Sydney Stephenson.* A very large number of fawn-coloured tubercles, of unusually large size, were found, chiefly in the region of the optic discs. Some of these tubercles invaded the retina. A diagnosis of acute miliary tuberculosis was made and subsequently verified. Death resulted thirty-three days after the onset, nineteen after admission to hospital, and five after the diagnosis, which could not have been made with certainty apart from the state of the eyes.

A Paper on Certain Practical Points in the Treatment of Congenital Dislocation of the Hip by Lorenz's Method was read by Mr. J. Jackson Clarke. He held that the shortened muscles must be fully stretched and the great trochanter brought down to, or below, its normal level. In children over 4 years of age it might be necessary to make a subcutaneous section of the adductors. He then described the act of reduction, the application of the retention apparatus, the subsequent use of massage and exercises, and the management of special cases.

A Case of Median Hare-lip, a very Rare Deformity, was described by Mr. R. C. Dun. The cleft was exactly in the middle line, the incisor teeth were perfect, and there was no alveolar cleft.

A Paper on Appendicitis in a Hernial Sac, based on Two Cases in Boys, was read by Mr. H. S. Clogg. These were successfully treated by operation. He stated that about 25 per cent. of recorded cases occurred in children: that the condition had been reported in quite young infants; that the appendix in a hernial sac was unduly prone to inflammation; that the condition could not be diagnosed with certainty from strangulation of the appendix or of Meckel's diverticulum; and that most cases were mistaken for strangulated hernia because of the sudden onset, abdominal pain, and the presence of a local irreducible swelling without impulse on coughing. The presence of fever from the onset, the indefinite character and smaller size of the swelling, and the early occurrence of œdema and redness of the skin were of diagnostic value.

A Paper on Two Cases of Xanthoma Multiplex was read by Dr. Gwynne.

A Paper on a Case of Sudden Death after Needle Puncture for Supposed Empyema, with Specimen, was read by Dr. Wilks.

A Paper on Osteomyelitis of the Spinal Column was read by Mr. A. H. Tubby.

A Paper on a Case of Hodgkin's Disease was read by Dr. Leader.

Editorials.

A NEW METHOD OF TREATING RINGWORM.

In a broad general sense it may be remarked that multiplicity of remedies advocated for any given disease form a fair measure of its rebelliousness to treatment. The greater the number of "certain cures" for a particular complaint the less likelihood of cure. That proposition may sound cynical, but it will probably be accepted without further demur by most medical men who have outlived the days of faith in the omnipotence of the Pharmacopœia. Tested in the crucible of practice, many of the legends of therapeutic lore dissipate into thin air. In other words, medicine has not yet arrived at the position of an exact science. Meanwhile medical observers all over the world are waiting, and watching, and working with now and then a real result of value amongst many false prophecies and unfounded claims.

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* For a full report of this case, see present issue.

Now, among the host of maladies which medical men are called upon to treat there is hardly one that can claim a longer list of remedies vaunted as "cures" than ringworm. In this instance multiplicity means to all intents and purposes a confession of failure. There is no royal road to the cure of ringworm.

The lack of any really solid advances in the treatment of ringworm affords a marked contrast to the rapid strides of our knowledge of the natural history of the disease that have been made during the past half-century. There has been no more brilliant page in the history of medicine than that which has gradually evolved the plurality of the ringworm fungi from the original *Microsporon audouini*. A great impulse was given to the investigation by the discovery of the methods of culture of microscopic fungi on nutrient media. It is possible that further advances in this direction may one day furnish us with some antitoxin or other specific means for destroying the ringworm fungus when it has effected a lodgement upon the human scalp. In spite of the large amount of knowledge that has been acquired there can be little doubt that a large field remains yet to be explored. No satisfactory explanation, for instance, has hitherto been forthcoming as to why ringworm should die out almost universally at about fifteen years of age.

Treatment, it is hardly needful to remark, may be divided roughly into direct and indirect methods. The direct aims at destroying the fungus by immediate contact with antiseptic drugs, while the indirect trusts rather to setting up of an inflammatory reaction of the neighbouring tissues, whereby a similar end may be attained by processes that are in this particular instance not altogether easy to understand in their entirety. The great obstacle to ready cure is undoubtedly the mechanical difficulty of reaching the fungus after it has penetrated the follicle or the bulb, or both of those structures. Bearing in mind the division of remedies that has been given above, there is little need in detailing the many remedies that have been advocated from time to time by various authorities, some of them of great experience and eminence. Yet the dermatologist may ring the changes over the whole gamut, and at the end of three or four years be compelled to admit his failure to cure his patient. Good results have been obtained of recent years with formalin, but, like all other remedies used for the same purpose, it has its failures as well as its successes. Perhaps the most powerful modern therapeutic agent used against ringworm has been the X rays. The remedy is sometimes brilliant but at other times it is useless, and unless used with great caution and by expert hands, it is liable to be attended with extremely grave accidents.

Another aspect of ringworm is the interruption it causes to education. If we are to follow the universal canons of responsible medical authority, no child suffering from ringworm can be permitted to attend school. That was, how the matter stood until Dr. David Walsh announced a new departure in the isolation of ringworm at the recent London Congress of Public Health. His method may be briefly described as isolating the scalp of affected children instead of isolating the children themselves. This process he achieves by encasing the shaved scalp in a cap-film of collodion or other impervious substance. Thus protected, it is absolutely impossible to spread ringworm, and the child may attend school. The film is peeled off every week or ten days, and effects a wholesale depilation of hair. In this way cure is materially hastened and prevention attained without interfering with education. It could readily be carried out by the education authorities of London and elsewhere founding central institutes whither affected children could be sent once a week or so to be treated. It goes without saying that such institutions would have to be under the charge of medical experts in ringworm. The adoption of this new method, together with rigid medical supervision of all public education schools, would soon bring us within reach of the prevention of one of the most disastrous of school diseases.

THE BIRMINGHAM NEW DENTAL HOSPITAL.

The care and preservation of the teeth has so near a relationship to the health of childhood and the prevention of physical degeneration, that all who are interested in the study of the diseases and also the hygiene of children must view with interest the establishment of a thoroughly up-to-date provincial dental hospital.

Birmingham is one of the few large cities outside London which possesses such a hospital. The old building, which in its time did good work, was founded in 1858 ; it is now replaced by a modern dental hospital, furnished with the most approved appliances, and throughout well fitted to form the basis of an admirable school of dentistry, this school being much aided by the fact that the University of Birmingham offers a degree in dentistry to its students.

The total cost of the building was £10,000, of which £1,537 remains unprovided.

The architect was Mr. Charles Bateman, of Birmingham. On July the 6th, 1905, the hospital was opened by Sir Oliver Lodge, D.Sc., F.R.S. (the Principal of the University of Birmingham), and afterwards the Committee of the Hospital entertained, at their own expense, upwards of a hundred guests to luncheon at the Grand Hotel.

Sir Oliver Lodge, in proposing the health of the Dental Hospital, spoke of the great advances of dentistry in recent years, and of the need of such hospitals in all large towns. With this we most heartily agree. All those of our profession who work in hospitals are aware of the deplorable, and indeed filthy, condition of the teeth of most of the working classes. Such conditions would not exist were the teeth of children more effectually inspected and the hygiene of the mouth better understood by the masses.

We congratulate Mr. P. T. Naden (the Secretary) and Mr. Richards (the Dean of the Dental Faculty) on the possession of a fine hospital and an excellent school of dentistry.

Abstracts from Current Literature.

Medicine.

Hereditary syphilis (*'Arch. of Pediatrics,'* 1905, *vol.* XXII, *p.* 181).—**J. S. Sharp** draws attention to the lesions of the upper air-passages due to hereditary syphilis. In his experience not 2 per cent. of children with congenital syphilis show Hutchinson's teeth. Clinical evidence may be limited to a roughened, corrugated condition of the tongue, and patches suggestive of leucoplakia. He reports cases of fistula of the trachea of two years' standing in a girl aged 10 years; post-pharyngeal abscess, which he regards as often syphilitic; perforation of the soft palate in a baby, aged 3 months; ulceration of the larynx in a boy, aged 12 years; gumma of the inter-arytenoid commissure and ulceration of the left arytenoid cartilage in a girl, aged 12 years; and gumma of the trachea in a boy, aged 5 years. Cases of this kind may occur without the presence of the classical symptoms due to hereditary syphilis, such as Hutchinson's teeth, keratitis, and flattening of the bridge of the nose. EDMUND CAUTLEY.

The diagnosis of mumps by catheterisation of Steno's duct (*'La Clin. Infant.,' May* 15, 1905).—**Sicard** and **Dopfer** communicate their researches to the Soc. de Biologie on the cytology of the parotid secretion This fluid, which is normally free from any histological elements, becomes, in the course of mumps, full of polynuclear lymphocytes, large mononuclear, and some cells peculiar to the salivary gland. Thus catheterisation of Steno's duct may give information in abnormal forms of this disease and in orchitis. These observations seem to show that the virus of mumps strikes the glandular system more in the fashion of a poison than by the direct attack of microbial agents. The parotid eliminates the poison of mumps in the same manner as it eliminates—while becoming swollen—other toxic materials such as mercury, lead, and iodine. This method is capable of forming the basis of a true *cyto-diagnosis* between mumps and other forms of parotitis. A negative cytology does not enable us to deny the existence of any previous glandular reaction, but a positive cytology is a witness to the inflammatory and desquamative process, of which the parotid is a seat.

VINCENT DICKINSON.

On the diagnostic and prognostic value of hæmato-cytology in infantile tuberculosis (*'Riv. di Clin. Pediat.,' December,* 1904).—**G. Olivi,** from the examination of a large number of children in the clinic at Bologna, comes to the following conclusions: (1) There is an almost constant increase of polynuclear neutrophiles in all cases of diffuse tuberculosis, and in severe local peritonitis and meningitis. (2) There is increase of lymphocytes when the tuberculous process invades the lymphatic system and spleen. (3) The percentage of polynuclear neutrophiles and lymphocytes is almost always very nearly unaltered in tracheo-bronchial adenitis and in tuberculous pleurisy. (4) There is an almost constant and marked decrease of eosinophiles in every case of tuberculosis, whether acute or chronic, localised or diffuse. (5) On the other hand, there is an increase of eosinophiles in those cases of localised tuberculosis should the blood be examined when the local process is undergoing resolution. (6) There is a slight increase of eosinophiles in tuberculous patients who are taking preparations of iodine. (7) Under treatment

with tuberculin there is a marked decrease of eosinophiles during the febrile period, and on the other hand, striking eosinophilia when defervescence occurs. (8) In all acute infective diseases there is always an increase of polynuclear neutrophiles and decrease or absence of eosinophiles, but when resolution takes place there is marked eosinophilia. (9) There is marked increase of lymphocytes in rickets with enlarged spleen, and in whooping-cough.
VINCENT DICKINSON.

Underdevelopment in children (hypotrophie infantile) (*'La Clin. Infant.,' May* 15, 1905).—**Variot** considers this condition often the sequence of infantile marasmus and of capital importance, and not thoroughly studied. Three scientific methods are of service: (1) the body weight; (2) the height; (3) radiography of the skeleton which affords information: (i) of diminished size of the osseous segments; (ii) that the diaphyses are more spongy, less calcified than normal; (iii) that the points of ossification in the epiphysial cartilages are slow in appearing. Premature children are normally underdeveloped. Tuberculosis, alcoholism on the part of the parents, congenital syphilis, congenital malformation, cardiopathies, achondroplasia, athyroidia are causes of special underdevelopment, but the two most common factors are gastro-enteritis and tuberculosis, which latter is rarely the cause of atrophy in very early infancy, but is later in making its appearance, is accompanied by rise of temperature and respiratory troubles, and no gain of weight is obtained whatever diet be administered. The gastro-intestinal form, on the other hand, appears early, is apyretic, and suitable diet is attended with rise in weight. Variot deprecates the use of tuberculin in these cases.
VINCENT DICKINSON.

Albuminuria of childhood (*'Versammlung Deutscher Naturforscher und Aerzte in Breslau,'* 76).—**Langstein**. The albumin-quotients, *i. e.*, the relations of euglobulin, pseudoglobin, and albumin show very regular variations in the cyclical albuminuria of acute and chronic nephritis of infant. There are three types of cases to be observed: (1) those in which only so-called euglobulin is excreted; (2) those in which both this and albumin are found; (3) cases in which all three albumin bodies are excreted in certain though not constant proportion. Influenced by the results of his investigations on the metabolism in cases of cyclical albuminuria Langstein considers this disease a constitutional disorder. The kidney lesion, the immediate cause of the excretion of the albumin, depends on vasomotor influences; he suggests that in cyclical albuminuria this albumin-compound may circulate in increased quantity in the blood and be derived from the same source as the increased uric and oxalic acids. The albuminuria of the newborn resembles cyclical albuminuria in the nature of the excreted albumins. In the discussion following this paper **Hochsinger** expresses his belief that the infectious diseases are etiologically of great importance, and cannot see his way to repudiate all connection with degenerative processes in the kidneys. **Pfaunder** maintains that cyclical albuminuria has a definite relationship to tuberculosis. Many children show later evidence of tuberculous affections and very often succumb to them.
D. O'C. FINIGAN.

Otology, Laryngology and Rhinology.

Congenital "thymic" stridor of infants (*'Revue Mensuelle des Maladies de l'Enfance,' March*, 1905, *p.* 97).—**Carl Hochsinger** reports a series of 58 radiographs of the thymus in nursing infants; in 26 hypertrophy of the thymus was present, and 20 of these showed the typical picture of congenital stridor. He considers that congenital stridor is due almost exclusively to compression of the trachea by a hypertrophied thymus. Other forms of noisy breathing occur, due to adenoids, enlarged glands, macroglossia, paralysis of the palate and laryngitis: but the peculiar bruit accentuated at the end of inspiration—congenital or appearing soon after birth, with retraction of the thoracic walls, but without the phenomena of laryngeal stenosis and without alteration of the voice—this can only be caused by compression of the trachea by an enlarged thymus. The site of the compression is always at the upper opening of the thorax. The diagnosis is made by skiagraphy and by percussion. Harold Barwell.

Pathology.

A case of status lymphaticus (*'Transactions of the College of Physicians of Philadelphia,' vol.* XXVI, *p.* 47, 1904).—**J. H. Musser** and **J. T. Ullom** report a case in a boy aged $5\frac{1}{12}$ years, well nourished and large for his age. Illness commenced by hoarseness which lasted through the night, and next day the temperature was 100° F. The following night there was rattling and bubbling in the throat, followed by cyanosis in the face and hands, with short, rapid breathing. His voice was hoarse. The next day his temperature was 102° F., with respirations 50, and great restlessness. His voice was at times hoarse, at others perfectly clear. At this time he was very dyspnœic, cyanosed face and hands, at times pupils dilated, but waxy pallor of the hands and face was most apparent. Bubbling and rattling in the throat and chest., Retraction of the interspaces and epigastrium with laboured inspiration and expiration. Considerable movement of the larynx. Pharynx and larynx congested. No enlarged thymus to percussion. His condition grew progressively worse, he developed a slight convulsion, and then became entirely oblivious to his surroundings, although until then he had spoken to those about him and recognised them. The convulsions continued at short intervals. At mid-day the temperature in the axilla was 105·6° F., and he died peacefully some two and a half hours after. The urine was loaded with albumin, but there were no casts. Post mortem a little turbid yellowish fluid in the right pleura; a few delicate fibrinous adhesions. Superior mediastinum almost entirely filled by the thymus. The general appearance is, of three lobes: a middle lobe which lies just below the sternal ends of the clavicles and reaches almost from one clavicle to the other. What appears as the lateral lobes extend down into the mediastinal fat between the pleura and pericardium. These lateral lobes are more or less fused above the pericardium, but as they descend they separate and apparently extend far down between the pericardial sac and the lungs. Lower down the phrenic nerve is in intimate connection with the gland on both sides. The left lung shows purplish-blue, sharply defined, raised areas of consolidation in the posterior portion, most extensive in the lower lobe. Scattered everywhere through the consolidation are grey or yellowish points, some of them exuding drops of yellow pus. The smaller bronchi in these areas contain drops of pus. The bronchi at the root are deeply congested and contain a thick, yellow, muco-purulent material, most plentiful in the smaller ramifications. The right lung shows purple consolidation of the lower lobe and irregular areas of deep purple consolidation in the upper and middle lobes, studded with minute yellow points. The smaller bronchi are entirely plugged by thick yellowish pus, and the bronchi at the root are deeply congested and contain a small amount of the same material. Epiglottis is œdematous and deeply congested, covered by mucus and a soft yellowish purulent material. Larynx deeply congested and very œdematous, and covered by small flakes of muco-purulent material. The trachea shows the same condition as the larynx and the epiglottis, and this extends down into the bronchi. The thymus weighs 4 grammes. On section it is of a pale pinkish-grey colour, dotted with minute opaque yellow points. Attached to the lower border of the left lobe of the thyroid is a smooth rounded mass measuring 2 centimetres in diameter. On careful dissection this does not appear to be in direct connection with the thyroid gland. On section the cut surface is rather firm, and has a slightly yellowish-grey colour, being somewhat translucent. It is dotted with minute points, opaque, and of yellowish hue. The spleen is of medium size with soft pulp of a dirty red colour, with here and there small hæmorrhagic points. Liver on section oozes much blood, the lobules fairly well marked with deep red centres. Kidneys: on section medullary pyramids are pale about the papillæ, but deeply injected about the peripheral zone; cortex, greyish red and cloudy; glomeruli injected. Anatomical diagnosis: acute muco-purulent laryngitis, tracheitis, and bronchitis; acute diffuse broncho-pneumonia; hypertrophy of thymus gland. Congestion of liver and kidneys; acute splenic tumour and cloudy swelling of viscera. The heart showed fragmentation, absence of cross striation of fibres, and marked granulation of muscle-cells. From lung and mucous membrane of larynx, Staphylococcus pyogenes aureus. No other organisms. Cover slips from larynx and lungs showed only cocci in groups. No other bacteria. No growth of bacteria was obtained from heart, spleen, liver, kidney, or thymus gland. The authors are of opinion that the case reported is one of status lymphaticus. The one thing lacking is the focal necrosis and marked hyperplasia of the germinal centres in the thymus, but they suggest that this can be overlooked when there is marked enlargement of the thymus, and the changes in spleen, cervical and bronchial glands are identical with those found in other cases. In the diagnosis dyspnœa, dulness over the manubrium and enlargement of the superficial lymph glands are the factors on which diagnosis is based. The authors discuss the cause of death, and review the modern theories, viz. pressure by the thymus and toxæmia induced by the thymus or lymphatic apparatus. That the thymus can cause pressure on the trachea, although there was no evidence of this in their case, is borne out by the relief obtained from tracheotomy in the cases reported by Koenig and Purrucker in infants of 3 weeks and 3½ months old; and Lange has reported a case where one diameter of the trachea was only one third that of the other in sequence to pressure. Lochte's experiments on hyperthymization of the blood, and Flexner's experiments with mydatoxins and cytotoxins and the induction of hyperplasia with focal necrosis of the germinal centres are alluded to. As to what causes the sudden accession of toxic material in the blood, they are unable to make a suggestion. In their case toxæmia was the cause of death, and for that there were two possible sources: one the infection, and the other the toxin the product of the lymphatic system, and after Lochte's experiments the plausibility of a theory of an auto-intoxication with its source resident in the lymphatic apparatus cannot be denied, in fact clinical experience shows that the type of infection from which the child suffered could not have produced such toxæmia in a few hours. Longcope found that in chronic Bright's disease and cirrhosis of the liver there is a decrease in the serum complement or alexin in the blood, and this fact permits of an easy infection, in most cases a terminal one. The lowered resistance due to the thymus may have permitted the infection to kill more quickly than it otherwise would. Solis Cohen, in the discussion that followed, alluded to the symptomatic antagonism of adrenal and thyroid to thymus, and said that he should certainly use adrenal, and should think of thyroid in any case of thymic asthma he might be called to; and Musser remarked that should he see a similar case to the one reported he would want to have some surgical means resorted to, failing relief from Cohen's suggested remedies.

Geoffrey Plantaganet.

General septic peritonitis in enteric fever without evidence of perforation ('*Lancet,*' *May* 6, 1905).—**Gordon Watson** narrates an interesting case in which a boy, aged 9 years, suffering from enteric fever, developed on the tenth day of his illness evidences of general peritonitis. Laparotomy was decided on. The abdomen was uniformly distended, hard, and tender all over, scarcely moving on respiration, and dull to percussion in the lower half on both sides. Temperature 102·6° F. and pulse 160. Tongue brown and furred; patient very restless with facies hippocratica. Incision was made in the middle line below the umbilicus. The peritoneal cavity was found to be full of thin, white, odourless pus, with flakes of lymph on the intestines; there were no adhesions; the intestines were not much distended but were red and dull in places. Some enlarged tuberculous mesenteric glands were found. There was no free gas in the peritoneum, nor was there any evidence of extravasation of intestinal contents. Death occurred seven hours after the operation. At the necropsy search was made for evidence of perforation, but none was found, and the bowel held water. When laid open the small intestine showed several early typhoid ulcers in the lower two feet and some swollen Peyer's patches. There were no sloughs. At one point the base of an ulcer seemed to be near the peritoneal coat, but the peritoneal coat was not visible from within at any point, nor was there any adherent spot which suggested a closed perforation. The large intestine was not involved. The spleen was very markedly enlarged. The glands in the mesentery were tuberculous, but there was no evidence of recent activity or of rupture of any gland. Cultivations from the spleen and heart's blood gave pure cultures of the typhoid bacillus. It seems not unlikely, the writer of the article remarks, that this was a case of pure typhoid peritonitis, and had it been seen earlier might have been treated successfully.

James Burnet (Edinburgh).

A case of pneumococcus pyocele (Abstract from '*Munch. Med. Wochens.,*' 1904, *No.* 7, *p.* 309, in '*Hygienische Rundschau,*' *June* 15, 1905).—**Achilles Müller** publishes a case in which the pus obtained by section of a pyocele as big as a hen's egg, there was found a pure culture of Fraenkel's pneumococcus with well-pronounced characters, both microscopical and cultural. The pus was removed from a sickly child, aged 4 years, who had been suffering for two years from a progressive nephritis attended by occasional œdema of the lids and feet. The testicle of the affected side had remained healthy, and the healing of the cavity was completed in nine days. It is probable that the pneumococcic infection occurred during an exacerbation of the nephritis attended by fever and pulmonary symptoms (œdema of the lung); for the hydrocele, which was already well-marked, then commenced to present signs of inflammation. A case of pneumococcic pyocele must be reckoned as a great curiosity.

M. D. Eder.

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Original Articles.

ON SOME OF THE DISEASES AND INJURIES OF THE EYE PECULIAR TO CHILDREN.*

By SYDNEY STEPHENSON, M.B., C.M., F.R.C.S.Ed.
Ophthalmic Surgeon to the Evelina Hospital and to the North-Eastern Hospital for Children.

MANY of the abnormal conditions of the eye in childhood result from developmental anomalies, but these for the most part I shall refrain from touching upon, since they will be described during the present course by Mr. E. Treacher Collins. My remarks will be limited to certain diseases and injuries of the eye met with exclusively, or almost exclusively, in children. You will therefore perceive that my subject is necessarily a somewhat small one. At the same time, as I hope to show, it is one of considerable practical interest and of no little importance.

A few cursory remarks with regard to the examination of children's eyes may serve as an introduction to the actual description of disease.

To estimate the sight in an infant is by no means so simple a matter as might at first be thought. If the child is in hospital and has been there for some little time, valuable information may be obtained from the nurse as regards the recognition of food, of parents, and so forth. The observations of a moderately intelligent mother, too, are often helpful. They are likely to be correct in case the sight has failed after being good, but are often at fault, on the other hand, when the infant is believed never to have seen properly. The test usually applied by the surgeon is to ascertain whether an infant turns its eyes towards the mirror when light from the latter is thrown into the eyes in a darkened room. According to comparative tests conducted at Queen Charlotte's Hospital, London, even a baby but a few days old will respond to the "flash-test," but as the faculty of sight, and especially of fixation, is slowly acquired, the baby must not be expected to follow the movements of the light until he has attained an age of several weeks. It would be a perfectly legitimate generalisation to say that all babies of three months old and upwards who do not respond to this test are either blind or imbecile or actually idiotic.

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* A lecture delivered on July the 11th, 1905, in the post-graduate course of ophthalmology in the University of Oxford.

Points to bear in mind in attempting to estimate the sight of little children are : (1) The presence or absence of rolling movements of the eyes, nystagmus, or squint. (2) The activity or otherwise of the pupils to light. (3) Any departure from normal as regards the size or conformation of the skull, a point in connection with which I may recall to your mind the fact that at birth the normal skull has a circumference of about 13 inches, at 1 year of 18 inches, and at 5 years of 20 inches. (4) The mental and bodily development of the child. With regard to this point you should be familiar with what Dr. Robert Hutchison ('Lectures on Diseases of Children,' 1904, p. 17) has aptly called "milestones" in the development of the normal child. The most important of these are as follows : the baby begins to cut his teeth at 6 months, and has all his milk teeth at the age of 3 years. The anterior fontanelle should be closed between the 18th and the 24th month. The baby should hold his head up at the age of 3 or 4 months, sit up from 9 to 12 months, walk at 12 to 18 months, and talk at 2 years. It is also important that you should notice the presence of the so-called "stigmata of degeneration," of which, perhaps, the commonest are marked epicanthus, vaulted palate, asymmetrical skull, supernumerary auricles, webbed fingers, post-anal dimple, and epispadias.

In older children, up to the age of, say, 5 years, a quantitative test of sight can easily be applied by ascertaining the distance at which familiar objects, as toys, can be recognised. As children can usually count before they know their letters, a rough test may be made on Snellen's types by getting the child to count the number of letters in each line, and by then entering the vision in the ordinary way, of course noting how it was elicited. An even better plan is that devised by Mr. Claud Worth ('Squint,' London, 1905, 2nd edition, p. 85), who employs five ivory balls, which vary in size from half an inch to one and a half inches. After the child has been accustomed to the little balls by being allowed to handle them, they are thrown on the floor to a distance of six or seven yards, turn by turn, beginning with the largest. The child is then told to go and to pick them up, and, as Mr. Worth says, "It is easy to tell by the way in which the child runs for the ball whether he really sees it before he starts, or is only going to look for it." I have found Mr. Worth's plan succeed with most children who can walk—that is, after 2 years of age.

After 5 years of age most children of the better class may be tested in the ordinary way at Snellen's distant types. With hospital patients, however, unless they appear to be unusually intelligent or something material depends upon the result, I do not usually test them on Snellen's types until they have reached the age of 7 years or upwards. In this connection it is well to know what position the child occupies at school, since, as a rule, it is not worth while to test an "infant," while "boys" and "girls," especially if over the first standard in an elementary school, may readily be tested. Roughly, you will remember that the first standard contains children of 7 to 8 years, the second those of 8 to 9 years, the third those of 9 to 10 years, and so on in proportion. A comparison of the child's age with the school standard, therefore, will not only afford a rough indication of the child's intelligence, but will also enable you to gauge the value to be attached to the estimation of the relative visual acuity as determined on the distance types. A good deal of time and of tact are called for in order to reach a true estimate of a child's relative visual acuity. Above all things, a child resents any appearance of hurry on the part of the examiner. Again, if he be hectored in the least, he will almost certainly fail to do justice to himself, and in that way convey a false estimate of his sight to the surgeon. It is better not to harry the child over somewhat difficult letters as "Z," "X," and "Q," but to allow him to slur them over, or even to miss them altogether. If the contrary course be adopted, he will often come to a full stop at the difficult letter, and will obstinately refuse to go any farther, even although with a little coaxing he will readily read two or three smaller lines.

Despite the sweet innocence of childhood—more often sung by poets than seen in the out-patient department of a children's hospital—care should always be taken to prevent deception, particularly in the case of children who squint; for example, the child should never be allowed to cover up one eye while the sight of the other is being taken.

In using the ophthalmoscope in adult patients we proceed with our investigation in a definite and regular order—first, examining the optic disc, then, the yellow spot region, next, the circumpapillary area, and, lastly, the peripheral parts of the fundus. In a young or fractious child this orderly sequence can seldom be followed. The region that first presents itself (usually the yellow spot region) should be scrutinised, and then we must, as far as possible, explore the other parts of the fundus, but without adopting any formal order in the process. In the case of children lying ill in bed, the difficulties of ophthalmoscopic examination are multiplied tenfold. The patients are sometimes too ill to be moved, and are often so irritable as to render satisfactory examination a matter of the greatest difficulty. Under such circumstances we have often to content ourselves with a passing glimpse of the optic disc or of any morbid changes that may be present. It is a fortunate thing that some of the most important ophthalmoscopic changes—tubercle of the choroid in particular—are seldom found elsewhere than in the central and most accessible portion of the fundus oculi.

If children lie in a state of "coma-vigil" or are actually unconscious, the examination can be made without let or hindrance, although we may be compelled to introduce a speculum between the lids, and to draw the eyeball into any desired position by means of fixation-forceps.

Both the direct and the indirect methods of ophthalmoscopic examination are useful in investigating the eyes of children in bed, and, in my opinion, one should not be employed to the exclusion of the other. For this kind of work the electric ophthalmoscope (of which several good patterns are now on the market) furnishes considerable help, since as the source of light and the mirror practically coincide, no co-ordination on the part of the surgeon is needed. The instrument can scarcely be praised too highly for facilitating the examination of bedridden children, although its limitations in other directions will at once strike those who endeavour to use it in ordinary out-patient work. Whatever form of ophthalmoscope we employ, it is seldom, if ever, worth while to endeavour to make an examination with undilated pupil. The pupil should always be dilated as fully as may be with some agent, as a 5 per cent solution of euphthalmine or a 10 per cent. solution of mydrine, which acts little or not at all upon the accommodation. Atropine (grs. 2 or 4 to the ounce) may, of course, be used instead of the newer agents, but that involves as its necessary consequence a paralysis of the accommodation, which may be troublesome unless the child is too young to complain or too ill to use his eyes. There is, moreover, a more cogent objection to atropine, namely, that its effects take several days to pass away, and during that period the reactions of the pupil—often a point in the diagnosis of certain nervous disorders—cannot be estimated properly.

Finally, if the patient be extremely troublesome, or important issues hang upon the results of examination, personally I never hesitate to administer ethyl chloride, and after having introduced a speculum, to make the ophthalmoscopic examination. The anæsthetic in question, the action of which seldom lasts for more than two or three minutes, gives ample time for the examination to be made.

The *technique* of using the ophthalmoscope in older children does not differ materially from that adopted in grown-up people, except that the child should be steadied by kneeling upon a chair and by being made to grasp the top rail of the chair with his hands. The services of a nurse will save the surgeon an infinity of trouble by keeping the child's head still during the examination. In the absence of help of this kind, the same object may be attained by grasping the lobe of the patient's ear between the finger and thumb of the disengaged hand during the direct examination.

It is advisable to have some definite object to which the child may look during the examination of the right or left eye, as the case may be. I find a couple of small glow lamps, one red and the other green, fixed on the wall at the far end of the room, useful. Failing some such simple device, a toy that rattles or jingles when shaken is useful in attracting a child's attention.

The examination of the field of vision with the perimeter seldom offers any difficulty if undertaken in a child of five years or upwards. It is advisable that this fact should be recognised more widely than appears to be the case, inasmuch as the diagnostic value of the field of vision in children sometimes cannot be over-estimated. Much as many children possess a visual acuity above the normal, so the limits of the visual field for white are often found to exceed the usual line.

The estimation of intra-ocular tension in babies is likely to yield most fallacious results unless a general anæsthetic is first administered for the purpose of doing away with muscular movements.

After the foregoing casual remarks, I pass forward to discuss the subject in hand, namely, diseases and injuries of the eye in childhood. In doing this I shall first take up affections of the lacrymal apparatus in children, and then congenital ophthalmia neonatorum.

After that, "keratomalacia" and the mysterious disease known as buphthalmos or "infantile glaucoma" will occupy our attention. Then "deformities of the skull and defects in sight" will be discussed, to be followed by "nystagmus" and "amaurosis" in children, some "family affections of the eye" and "congenital word-blindness." My remarks will conclude with a description of certain injuries to the eye liable to be sustained by the infant during his passage into the world. I shall pass over in silence cataract (congenital and infantile), squint, eczematous ophthalmia, interstitial keratitis, spring catarrh, and glioma and pseudo-glioma, because the time at my disposal is too limited to allow me to deal adequately with those important subjects.

I would venture to digress from the subject so far as to insist upon the importance of general disease as a factor in the causation of affections of the eye in children. In this connection it is only necessary to point to the influence of digestive disorders, of gonorrhœa, of tuberculosis, and, above and beyond all, of syphilis. Those who would deal successfully with the ocular diseases of infancy should therefore have something more than a mere passing acquaintance with the general ailments to which children are liable, a point, indeed, too obvious to be laboured.

AFFECTIONS OF THE LACRYMAL APPARATUS.

Dacryoadenitis.—Inflammation of the lacrymal gland, dacryoadenitis, is rare in children. I have myself met with it under two conditions—(1) as a complication of epidemic parotitis, and (2) as an idiopathic inflammation.

I may briefly quote an example of each condition:

(1) George P—, aged 7 years, developed, on June the 10th, 1901, an ordinary attack of mumps, characterised by a slight rise in temperature (101° F.), and swelling of the right parotid gland. On June the 15th the other parotid was affected, the tumefaction of the first having in the meanwhile subsided almost completely. Three days later (June the 18th) the parotids were no longer enlarged, but the upper lid of the right eye was red and œdematous, and a somewhat tender lump was found to occupy the lacrymal fossa. The affected eye watered a good deal. On June the 20th the symptoms had been transferred to the other eye. The patient had recovered by June the 24th—*i. e.,* a fortnight after the parotitis had commenced.

(2) Aubrey D—, aged 3½ years, was first seen on April the 3rd, 1905. The history was that four days before admission into the Evelina Hospital the left upper lid had become red, painful, and swollen, and that a thick discharge had been noticed to issue from the eye. There was no history of mumps or of exposure to the infection of that disorder. Upon admission, the left upper eyelid was markedly swollen and discoloured, while the lower lid showed slighter changes of the same kind. There was a profuse discharge of thick pus from the eye. At first sight the case resembled

one of gonorrhœal ophthalmia. But examination under a general anæsthetic showed that a hard nodule was present in the position of the lacrymal gland, whence it extended for some distance into the outer part of the œdematous upper eyelid. The upper and outer part of the ocular conjunctiva was chemotic, and the chemosis overlapped the cornea, which was clear and bright. No proptosis. Parotid glands not enlarged. Temperature 99·2° F. A narrow blade pushed through the upper lid into the nodule gave exit to no pus. Under hot boric fomentations the condition receded spontaneously, and the child was discharged well after a stay in hospital of thirteen days. During that period the general condition of the child was good, and the highest point reached by the temperature was 99·6° F. The child was brought to the out-patient department on May the 2nd, when it would have been difficult to tell from inspection which had been the affected eye.

Dacryocystitis.—For reasons that will appear immediately, it is desirable to distinguish between affections of the tear passages as such occur in children under one year of age and in those over that age.

(*a*) A baby, usually less than 6 months' old, is brought with the statement that the eyes have been noticed to discharge either from or shortly after birth. On examination of the infant, a little plug of muco-pus can be seen to lie at the inner canthus or to glue the cilia together. There is no swelling of the eyelids, so that the baby can open his eyes freely; the eyeball is not bloodshot; the cornea is clear. Although the palpebral conjunctiva may be somewhat hyperæmic, yet it has never the thick, red, folded, and villous appearance so characteristic of ophthalmia neonatorum. It is the exception for an obvious swelling to exist in the region of the lacrymal sac—*i. e.*, at the side of the root of the nose, behind the tendo oculi. More commonly there is a slight, ill-defined fulness of the region in question. When firm digital pressure is made over the internal palpebral ligament muco-pus may be seen to exude from one or other punctum, and a notable amount of discharge may in that way often be squeezed into the conjunctival sinus. A less frequent event is for compression to give rise to an escape of muco-pus from the corresponding nostril. In about three quarters of my cases the affection has been limited to one eye. Nevertheless, it is not rare to find from the history that both eyes were attacked to begin with, and that while one has recovered, with or without treatment, the other has failed to do so. Most of the patients who have fallen under my notice appeared to enjoy excellent general health, and I am confident that congenital syphilis did not exist in more than 5 per cent. of the total number—that is to say, in no greater proportion than would be found in poor children attending a hospital for other ailments.

With regard to the frequency of the condition, among 1538 out-patients seen in the ophthalmic department of the North-Eastern Hospital for Children, London, no less than 27—or 1·75 per cent.—were affected. Those figures, however, probably understate the frequency of the ailment, since there are grounds for believing that many cases get well of their own accord without treatment at hospital or elsewhere.

If the secretion expressed from the lacrymal sac be examined by means of cover-glass preparations and cultures, it will be found to contain bacteria. I have conducted many such investigations, and, without wearying you with figures, will merely state that the micro-organisms most commonly associated with the lacrymal mischief are three in number—namely, the pneumococcus, the xerosis bacillus, and the staphylococcus pyogenes albus. Since the two last-named are common inhabitants of the normal conjunctival sac, their presence is hardly likely to be very important.

The researches of modern embryology have taught us that the lacrymal sac and duct are formed from a solid rod, which originates from proliferation of the epithelium at the bottom of the lacrymal groove. By liquefaction of its contents this rod eventually becomes hollow and converted into a canal lined with epithelium. The canaliculi are produced by a bifurcation of the epithelial ridge at the inner canthus. Now, if from any cause delay occurs in the elaboration of the passage, a baby may come into the world with the lumen of the lacrymal tube blocked in various ways. In some instances it is probable that the obstructing medium may be merely inspissated material, while in others it is certain that it may be in the nature of one or more mucous folds. The researches of Rochon-Duvigneaud and others have shown that the lower end of the nasal duct is directed towards the mesial line, and that the canal straightens itself as the superior maxilla develops in height. The canal is divided into compartments by partitions placed at different levels. One of the most conspicuous of these diaphragms forms a reduplicated fold at the lower end of the canal. This is often imperforate, so that the epithelial *débris* filling the passage cannot escape, and may indeed cause the membrane to become distended bladder-wise, a condition described by Bochdalek many years ago under the name *Endblase*. Under such conditions it needs only septic infection to produce the clinical picture of dacryocystitis. The sources of sepsis are, of course, many in number, and may be maternal or otherwise. When the child is born with a discharging lacrymal sac, infection has almost certainly been derived from the maternal passages, and, in my experience, a history of secretion from the genitalia is often forthcoming in such cases. On the other hand, when symptoms are not noticed for several days after birth, the source of infection is likely to be external —for example, from the baby himself or from those about him.

The condition described may be likened to the common and well-known condition of mastitis in babies, where an abscess of the breast may arise from penetration of pyogenic organisms into the epithelial remains that block the ducts of the gland.

The treatment of the condition is as simple as it is satisfactory. Anything like rough handling should be avoided, but careful digital pressure should be made twice a day over the lacrymal sac, with the twofold object of squeezing out secretion through the puncta and of breaking down any obstruction that may exist in the nasal duct. When definite distension of the sac is present, as in the following case, one application of pressure-massage may suffice to cure:

(3) A baby, aged one month, was seen by me on January the 3rd, 1900. At birth the left eye was noticed to be affected and to have a lump the size of a pea at its inner side. On firm pressure the swelling dispersed suddenly, its contents passing presumably into the naso-pharynx. The child died four days after she was seen by me from "bronchitis and marasmus," but the eye gave no further trouble after the lump had been squeezed.

When compression fails, as it may do when entrusted to the hands of an ignorant or careless mother, we must clear away any obstruction by passing a small probe down the nasal duct. Formerly I was in the habit of slitting the lower canaliculus before probing, but I now content myself with dilating the punctum and canaliculus with a fine, conical instrument, set in a handle, which serves not only to stretch the parts, but also acts as an efficient probe for the duct. As a rule, a single operation of this kind is enough to cure the disease. The nasal duct in babies is extremely short, a point to be borne in mind when using the probe. I have been struck with the fact that in these cases a definite obstruction *qua* obstruction is seldom to be felt. Another point about them is that the end of the probe often feels, as if it were, in a large cavity, doubtless the nasal cavity, which seems much nearer than usual, owing to the shortness of the nasal duct.

There is, I think, a considerable risk of setting up a fistula if the more marked lacrymal collections be lanced from the cutaneous aspect. It is, indeed, a question how many of the lacrymal fistulæ seen in older subjects owe their origin to this method of treating the lacrymal abscess of newly-born children.

(*b*) Lacrymal disease, especially lacrymal abscess, in older children is practically always due, in my experience, either to syphilis or to tubercle. The cases, particularly the syphilitic ones, often recover under constitutional treatment, combined with the simplest local measures, a fact that has rendered me more chary than I once was about interfering surgically. The evidences of syphilis are sometimes none too easy to obtain, although the *café au lait* complexion, more or less depression of the bridge of the nose, and perioral or perianal cicatrices often accompany the disease. In the following case the evidence of syphilis was obtained in a rather curious coincidental way :

(4) Joseph W—, aged 6 years, first seen on January the 6th, 1905, with the right lacrymal sac distended with muco-pus, which appeared in the conjunctival sinus when pressure was made over the prominence. Enlarged glands in neck. The permanent teeth had not yet appeared. The face and complexion, however, rather suggested syphilis. One miscarriage; no still-births. A fortnight later, the patient's left eye showed signs of commencing interstitial keratitis, and later still the same disease developed in the second eye.

The tuberculous nature of a lacrymal affection may be inferred from the family history and co-existing signs of tuberculosis, especially indolent enlargement of the preauricular and neighbouring glands, and can be demonstrated by the discovery of the tubercle bacillus in discharge or scrapings from the affected sac. The local condition of the sac, too, often affords strong presumptive evidence in favour of its tuberculous character. It is apt to show one or more fistulæ, with violaceous and everted edges, and to feel not only thickened but also " lumpy," as if it contained so many polypi. Persistence in an almost unchanged form for months together is also a characteristic of these cases.

Tubercle of the lacrymal sac, despite the comparatively small number of cases reported in the literature, is not, in my experience, an exceedingly rare disease in children.

Congenital Ophthalmia Neonatorum.

It would be a truism to say that serious purulent inflammation of the eyes of newly-born babies is almost invariably due to infection by the specific microbe of gonorrhœa. The bacteriological investigation of 1377 cases of ophthalmia neonatorum in the collective practice of seventeen observers showed that gonococci were present in 61·68 per cent. Among 121 cases of my own, the proportion was 58·67 per cent. We may therefore conclude that roughly two-thirds of all cases of ophthalmia neonatorum are due to the gonococcus.

According to figures I have published elsewhere ('Trans. Obstetrical Society of London,' vol. xlv), 80·48 per cent. of the gonorrhœal cases manifest themselves by the appearance of inflammatory symptoms within four days after birth. The actual infection of the baby's eyes with gonococci may come about in three possible ways—(1) in the maternal passages either before or during the act of birth, (2) almost immediately after birth, and (3) one or several days after birth. The second is admitted to be by far the commonest mode of infection. The germ-laden discharge from the maternal passages clings about the eyelids and eyelashes, and, as a rule, is carried into the conjunctival sac, either by the blinking of the baby or by the water, sponges, or towels used for the first bath.

The term "congenital ophthalmia neonatorum," or "*ante-partum* conjunctivitis," has been applied to cases where the baby actually comes into the world with diseased eyes or else develops ophthalmia within a few hours after birth. These cases (of which the existence can scarcely be doubted nowadays) are interesting from several points of view. They open up certain points as to intra-uterine infections, somewhat of a burning question at the present time in view of the causation of congenital conditions such as opacities of the cornea and anterior staphyloma, and, for that matter, of many other so-called "congenital anomalies" of the eyes.

A child, as is well known, normally traverses the vagina with closed eyelids, and as the junction between the lids is watertight, morbid secretion can hardly enter the conjunctival sac under ordinary circumstances. That could, however, come about during face presentations, the application of forceps, or during digital examinations on the part of the accoucheur. Some of the cases of ante-partum infection can be reasonably explained by a rupture of the membranes having taken place several hours, or even days, before the child was born, thereby allowing gonococci to reach the conjunctival sinuses. The temperature of the parts and the condition of the conjunctiva may possibly account for the relatively rapid development of the inflammatory process observed in some of these cases. Magnus (1) and Bellouard (2) have each reported instances of this kind. Parichew (3) has related a cognate case, where an ill-nourished baby, as soon as it came into the world, was found to be suffering from ophthalmia, together with opacity of the cornea. Gonococci were demonstrated in discharge from the eyes. The membranes had ruptured three days before the beginning of labour, which had lasted about twelve and a half hours and was normal in every way. Of several similar cases I have myself seen I will relate very briefly the leading facts of one :

(5) Thomas W—, aged 3 weeks, was seen on February the 23rd, 1898, suffering from bilateral ophthalmia with gonococci. The baby was born at term after a labour lasting twenty-six and a half hours, and the "waters burst" at least twenty hours before delivery. The right eye was observed to be inflamed as soon as the child came into the world, and the left eye became infected on the tenth day.

In another class of case it is probable that the eyes become infected *in utero*, presumably by the passage of gonococci through the intact membranes or, as Bellouard has suggested, through a lateral rupture of the membranes so trifling as to permit little liquor amnii to escape, although sufficiently large to allow gonococci to penetrate. The first authentic cases of the kind known to me were reported in 1858 by Rivaud-Landrau (4), and since then cases have been published by Chancon, Friedenwald (5), Bellouard (2), Strzeminski, and Armaignac (6). Armaignac's case is so conclusive as to deserve a word of passing mention. An ill-developed infant, weighing only 1786 grm. (3½ lb.), was born at the eighth month, after a labour lasting one and a half hours. At birth the lids were found to be tense, red, and swollen, and upon separating them pus escaped from the eyes. The corneæ were white and macerated. A purulent vulvitis was also present. The mother had suffered from metritis. Nieden's case (7), where a baby born in a caul developed ophthalmia twenty-four hours later, probably belongs to this class. I have heard of a case, but have been quite unable to obtain particulars, where a baby delivered by Cæsarean section was found to present ophthalmia.

The following case has recently fallen under my personal notice:

(6) A baby girl, aged 1 month, was brought to the Evelina Hospital on June the 20th, 1905, on account of double ophthalmia, associated with numerous gonococci in the discharge from the eyes. Both corneæ were hazy, but free from actual ulceration. She was a miserable-looking, "snuffling" baby, weighing 3 lb. 8 oz., with a shock of dark-brown hair (the so-called "syphilitic wig"), and sores upon the anus and vulva. According to the history given by the mother, and afterwards confirmed by the medical man who confined the woman, the baby was born at the end of the eighth month of pregnancy, without instruments, after a natural labour lasting thirteen and a half hours. The "waters burst" seven and a half hours before the completion of the labour, and the only vaginal examination was made by the doctor half an hour before the baby was born. The child was born with red lids and discharging eyes, but the corneæ were clear. Vulvitis was not present. A former baby had suffered from ophthalmia neonatorum.

The evidence, in my opinion, is enough to justify us in believing that, under rare circumstances, there may exist a specific metritis or endometritis, with the passage, direct or indirect, of gonococci into the amniotic fluid. For that matter, the causative microbe need not necessarily be the gonococcus, for I have notes of several cases of congenital ophthalmia where the gonococcus was not present, or at all events could not be demonstrated. Rare cases of congenital anterior staphyloma, of which several have been reported recently, certainly suggest infection, ulceration, and perforation of the cornea at some period considerably prior to birth.

References.

1. Magnus.—'Klin. Monatsbl. f. Augenheilkunde,' T. xxv, p. 389.
2. Bellouard.—'Thèse de Paris,' 1892.
3. Parichew.—Annales d'Oculistique,' 1893, p. 313.
4. Rivaud-Landrau.—'Annales d'Oculistique,' T. xxxvii, p. 66.
5. Friedenwald.—'Medical News,' 1895, p. 257.
6. Armaignac.—'Annales d'Oculistique,' October, 1902.
7. Nieden.—'Klin. Monatsbl. f. Augenheilkunde,' October, 1891.

(*To be continued.*)

A CASE OF MUSCULAR ATROPHY, PROBABLY OF THE SO-CALLED "PERONEAL TYPE."*

By F. Parkes Weber, M.D., F.R.C.P.,
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The patient, Ethel B——, aged 11 years, was admitted under my care at the German Hospital on April the 26th, 1905, because of muscular wasting in the left leg and right hand. On examination of the left lower extremity there is found to be considerable atrophy of the peronei and of the whole calf and, to a much lesser degree, of the thigh muscles. The circumference of the left thigh, 5 inches above the patella, is $12\frac{1}{2}$ inches, that of the right thigh 13 inches. The circumference of the left leg, 4 inches below the patella, is $8\frac{1}{4}$ inches, that of the right leg $9\frac{1}{8}$ inches. The two lower extremities are of exactly equal length, as measured from great trochanter to external malleolus, showing that the growth of the bones in the affected extremity has not as yet been hindered. There is great wasting of the muscles of the right hand, especially of the thenar eminence, sufficient to produce a claw-like appearance, and the muscles of the right forearm are somewhat smaller than those of the left forearm. There is a certain amount of loss of power associated with the muscular atrophy, and the patient has felt a stiffness or difficulty of some sort in using her right hand for writing, but she can walk well and can dorsally flex her left foot like her right foot.

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* The case was shown at the meeting of the Society for the Study of Disease in Children, May the 5th, 1905.

There is a slight degree of "pes cavus" on the left side, as pointed out to me by my friends Dr. Arkwright and Dr. Cantley, but no pes equinus or equino-varus. The knee-jerks are present, but the jerk on the left side is less than on the right. No ankle clonus can be obtained. The plantar reflex on the right side is prompt and of the normal flexor type; that on the left side is sluggish and obtained with difficulty, but, when obtained, is likewise of the flexor type.

Sensation.—There is slight impairment for all forms of sensation (for touch, pain, and temperature) over the right hand and lower part of the forearm, especially on the ulnar side of the hand, but sensation is good higher up the arm and in the left upper extremity. There is impairment for all forms of sensation over the left foot and, more markedly, over the outer side of the lower third of the leg. Sensation over the left thigh and the whole right lower extremity is natural, excepting in regard to electricity, as mentioned later on. No spontaneous pains are now complained of.

Electrical reactions.—Contraction to faradism is more sluggish and obtained with much greater difficulty in the muscles of the right hand (particularly the thenar eminence) than in those of the left hand. In the right thenar eminence the contraction to galvanism is very sluggish and diminished in amount, and ACC is greater than KCC; in fact, there is a typical reaction of degeneration in these muscles. In the thenar eminence of the left hand the contraction to galvanism is brisk, and KCC is greater than ACC. Excitability to faradism is greatly diminished in the muscles of both legs, and no contraction is obtained in the muscles below the knees even when the faradic stimulus is strong enough to cause pain. The peroneal and calf-muscles of the left leg require a stronger galvanic current to induce contraction than do those of the right leg, but KCC is greater than ACC in both limbs. Sensation to faradism is much impaired in both legs.

With the exception of lessened irritability to faradism, which, as I have already mentioned, is very marked in the right leg, it appears that the only muscles as yet definitely affected in any part of the body are those of the left lower extremity and right upper extremity. There is no spinal curvature. The facial and oculomotor muscles act quite naturally. There is no muscular inco-ordination to be observed in the movement of the limbs. No fibrillary twitchings have been noticed anywhere, neither have any unnatural vaso-motor phenomena. Ophthalmoscopic examination shows nothing abnormal.

The general nutrition of the patient is fairly good. She is of medium height for her age, and weighs 3 st. 10 lb. She has slight chronic enlargement of the tonsils, but there is no fever or any physical sign of disease in the thoracic and abdominal viscera. The urine, of specific gravity 1025, is clear and free from albumin and sugar. The mental development is quite satisfactory.

History.—Her health has generally been good. The wasting in the left leg seems first to have been noticed by her father, about August, 1904, when she complained of some pain in the left knee, which lasted about a week. The father was likewise first to discover the wasting in her right hand; this he observed in December, 1904, when she told him that the hand felt stiff in writing. She has had measles, but this was as far back as 1901. No family history of a similar affection has been obtained. She is one of a family of six girls and a boy, all fairly well grown, though two of her sisters seem to have adenoid vegetations of the nasopharynx. Her father and mother are both living.

Remarks.—Syringomyelia is unlikely in the present case, for the characteristic sensory symptom of this disease (dissociation in impairment of sensation) is absent, and there is no lateral curvature of the spine. Owing to the insidious and practically painless onset and the distribution of the muscular atrophy, a pure neuritis is extremely improbable, and a diagnosis of anterior poliomyelitis would not account for the impairment of sensation, even were it to be allowed that chronic anterior poliomyelitis is probable in childhood. The most probable view is that the child, though the only one affected in her family, has commencing "muscular atrophy of the peroneal type," an affection first described, independently in the same year (1886), by Charcot and Marie in France and by H. H. Tooth in England. The atrophy is very asymmetrical at present, but it may become more symmetrical if the disease advances further.

"Muscular atrophy of the peroneal type" is by no means so limited to the peroneal muscles in its early stages as this name by which the disease has been christened would lead one to suppose. Neither is the disease a pure primary amyotrophy (muscular dystrophy), as by some it has been supposed to be; and since both neuritis and degeneration of the posterior columns of the spinal cord have been found (by post-mortem examination) to be associated with the muscular atrophy in cases of this class, it is not surprising that sensory phenomena should constitute a part of the clinical symptom-complex. The decided reaction of degeneration to galvanic stimulation of the right thenar eminence is a noteworthy feature of the present case. Its presence, and likewise the presence of impairment of faradic irritability in the apparently unaffected (that is, not atrophied) right leg, strongly support the view that changes in the nerves constitute early, if not the earliest, lesions of the disease in question.

If the diagnosis of "peroneal type of muscular atrophy" be correct, there may after all be some connection between the measles in 1901 and the atrophy; for in many cases this form of atrophy has been known to follow an attack of measles or some other acute infectious disease. The attention of the parents was not directed to the wasting till the child chanced to complain of a pain in the knee in 1904, but in reality the wasting may have commenced much earlier. I have to thank my friends Dr. F. E. Batten and Dr. J. A. Arkwright for much information bearing on the subject of the present case.

CASE OF PROGRESSIVE PALSY OF CEREBRAL ORIGIN.*

By Harry Campbell, M.D., F.R.C.P.

Physician to the North-West London Hospital and to the West End Hospital for Nervous Diseases.

Boy, aged 13 years. Mother has had five children. During the pregnancies of three of them there was uterine hæmorrhage. All these three were born prematurely, and they all had convulsions. The first of them was a seven months' child and died at 6 months; the second—the patient—was an eight months' child; the third, also an eight months' child, died at 17 months, and seems to have been hemiplegic. The patient was born (delicate) at the eighth month. The mother had uterine hæmorrhage the whole time she carried him, and was in bed with hæmorrhage a week before the child's birth. He was bottle-fed, he suffered from convulsions, and no one thought he would live until he was 2 years old. He suffered every two to three months from attacks of vomiting and stupor, which lasted for some hours. He began to walk when 2 years, 5 months old. His head closed when he was 2 years, 4 months old. Thenceforward he steadily improved in health, and at the age of 7 was a strong, fine-looking boy. At this time he had a "kind of fit," which lasted about an hour. He lost consciousness, opened his mouth, put out his tongue, which was black, and rolled his eyes about. The mother attributed this seizure to the great heat which prevailed at the time. He quite got over this attack, but a fortnight afterwards the mother noticed that the boy, who had hitherto walked normally, began to walk on the toes of his left foot. For weeks she thought it was only a habit, and was constantly telling the boy "to put his foot down and not walk like that." Some months after this he was taken to St. Bartholomew's Hospital, where his foot was put up in plaster, but without any improvement. Two years later, *i. e.* when he was 9 years old, he was admitted into the same hospital, under Mr. Walsham,

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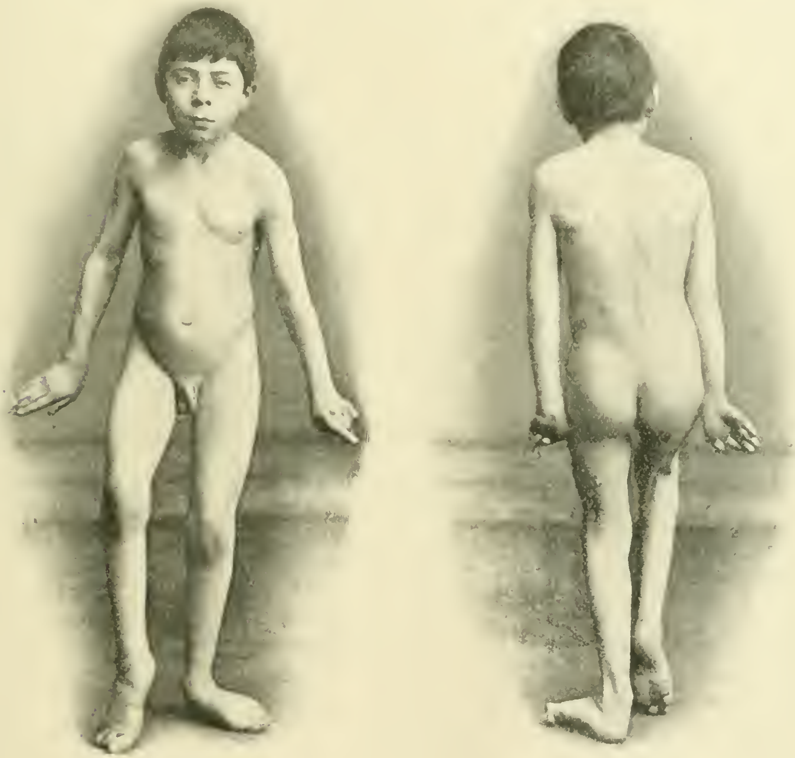
* Exhibited at the Society for the Study of Disease in Children, November the 18th, 1904.



who cut some tendons of the left foot, and this was followed for a few months by slight improvement in walking in the left foot. Three months afterwards the mother noticed that the left hand began to get drawn and the right leg to be affected like the left. When 10 years old, *i. e.* one year after his admission into St. Bartholomew's, he again saw Mr. Walsham, who said it was a hopeless case. It was now noticed that the muscles of the face were beginning to be affected, speech becoming difficult and indistinct, while the feet got so bad that he could hardly walk. When 11 years old, *i.e.* two years ago, he went into the Orthopedic Hospital, Oxford Street, where the tendons of both feet were cut in three or four separate operations, but without any benefit. Soon after this the right hand began to get bad, and writing became difficult. (He went to school at the age of 5 years and made good progress.) The mother says he has steadily been getting worse since the beginning of the paralysis, and that about every three months he has had a slight "faint," during which he turns white and giddy and vomits, but never quite loses consciousness.

Present condition.—He is a well-nourished, healthy-looking boy. The nails are bitten.

Face.—There is a generalised weakness of the facial muscles, especially on the right side. He finds great difficulty in elevating the upper lip, which permanently covers the front upper teeth. The weakness of the muscles about the mouth causes an indistinctness of utterance.

There is no paralysis of the ocular muscles, the muscles of mastication, the soft palate, or of the pharynx.

Hands.—The paralysis seems to be almost entirely confined to the extensor longus digitorum. On the left side there is marked secondary contraction of the large flexors of the fingers, especially of those belonging to the second, third, and fourth fingers. On this side also there is a tendency to athetosis.

Feet.—Both feet, but especially the right, are fixed in the position of equinus. The paralysis involves chiefly the extensors of the toes, the right hallux apparently escaping.

There is no wasting. The electrical reactions are normal; the condition of the tendon-jerks and skin-reflexes calls for no comment.

Diagnosis.—The lesion in this case clearly involves the upper motor neurons and the occurrence of the fits, especially of the one which heralded the onset of the paralysis, suggests that it is cortical. But for the progressive nature of the paralysis, the diagnosis would have been double hemiplegia from thrombosis. As it is the diagnosis would appear to rest between a progressive symmetrical thrombosis in the vascular areas of the motor cortex, or a progressive degeneration originating in the nerve-elements of the region in question.

THE INITIAL LOSS OF WEIGHT IN INFANTS.

By C. Nepean Longridge, M.D.Vict., F.R.C.S.Eng., M.R.C.P.Lond.

Resident Medical Officer, Queen Charlotte's Lying-in Hospital.

The loss of weight which is a normal event in new-born infants presents certain features of interest: the following tables have been made out from the notes of 400 cases recently delivered in Queen Charlotte's Hospital. The infants were entirely breast-fed, and all regained their weight before leaving the hospital and so may be regarded as normal and healthy. The babies are weighed immediately after birth, and on the evenings of the third, fifth, and eighth days and also on the morning of the day on which the patient leaves the hospital. This is generally about the fourteenth. No spring scales are used, but in all cases knife-edge balances are employed.

A noticeable point in Table I is that the male children are slightly heavier than the female, and that the children of multiparæ are heavier than those of primiparæ. The table does not support the common idea that the infants of multiparæ regain their weight quicker than those of primiparæ, owing to the supposed more rapid establishment of lactation in multiparæ.

The average amounts of loss in Table I are very close together. It will be seen, however, on looking at the other tables that the loss becomes greater the heavier the child. The ratio between the amount of loss and the weight of the child is not the same in all cases, but tends to increase with the weight of the child. For whereas a seven-pound child loses $\frac{1}{14}$ of its body weight, a five-pound child loses $\frac{1}{16}$ of its body weight only. The general practice at Queen Charlotte's is to tie the cord as soon as it has stopped pulsating at a point about six inches from the navel of the child. Dakin states that after late ligature of the cord, *i. e.* when it has stopped pulsating, the loss of weight is generally about two to three ounces only, whereas if the cord be ligatured immediately the loss may be as much as half a pound. The average loss shown in Table I tends to show that the loss is greater than he gives it. Hofmeier, Zweifel, and Ribemont also state that the initial loss is greater after immediate ligature than after late ligature of the cord.

As the babies are not weighed every day at Queen Charlotte's—

a fact which is accounted for by a disinclination to the partial exposure which accurate weighing involves—it has not been possible to determine the exact time at which the babies regain their birth-weight; but the method which has been adopted in these tables of taking the day on which the birth-weight was reached or exceeded, together with the excess over the birth-weight, gives a fairly accurate idea of what occurs. Table I shows that 400 babies exceeded their birth-weight by 2½ ounces about nine days after delivery, without any marked difference between the children of multiparæ and those of primiparæ being noticeable. On looking at the other tables, however, it appears that the children of multiparæ do regain their weight a little before those of primiparæ, a discrepancy which is perhaps accounted for by the varying numbers of children from which these tables have been compiled.

The cause of the initial loss of weight in infants is generally stated to be due to the fact that, while voiding meconium and urine, the child is obtaining practically nothing from its mother during the first three days of its life. In four full-time still-born children which the author has had an opportunity of examining the average amount of meconium found in the large intestine was 30 c.c., and the average weight of this meconium was between an ounce and one and a half ounces. It is difficult to make any estimation of the amount of urine passed by a baby. In order to gain some information on this point one of the sisters at Queen Charlotte's kindly undertook to weigh the napkins of four children before and after use, commencing immediately after delivery. There was, of course, some unavoidable loss from evaporation, but this source of fallacy was avoided as much as possible. The difference between the weights of the napkins before and after use was taken to represent approximately the amount of meconium and urine passed. A comparison between this weight and the loss of weight in the baby itself shows a discrepancy which must be accounted for in other ways. The average weight of meconium and urine estimated by this method was 7½ oz., and the average weight lost was 12½ oz., all four babies being above the average size. This shows that five ounces are lost by other means than meconium and urine, and that the amount of urine passed is somewhere about 6 oz., taking the average amount of meconium as 1½ oz. The additional 5 oz. are probably accounted for by the loss of water from the lungs and perspiration. A baby's skin is so thin and vascular that it is likely that more is lost in the latter way than by the lungs. This view is upheld by the fact that the initial loss is greater during the summer months, when perspiration may be expected to be freer, than during the winter months. To establish this point the average loss of twenty-five healthy male infants of multiparæ born in July was compared with the average loss of the same number of similar infants born in December. It was then found that whereas the July babies lost just under nine ounces apiece, the December babies lost just under six ounces. The cases were, of course, taken from the records of the hospital without selection. It might be expected that in premature infants, where the surface is great in proportion to the mass of the child, the loss of weight would be proportionately greater than in larger children, but the experience here tends to show that premature children do not lose much, which is probably due to the fact that artificial feeding is commenced immediately in these cases.

Table I.

Totals.	Multiparæ.		Primiparæ.	
	Males 100	Females 100	Males 100	Females 100
Birth weight . . .	7 lb. 6¼ oz.	6 lb. 14½ oz.	6 lb. 15¾ oz.	6 lb. 11¾ oz.
Weight third day . .	6 lb. 14½ oz.	6 lb. 8¼ oz.	6 lb. 8¼ oz.	6 lb. 4¼ oz.
Weight regained . .	7 lb. 8¾ oz.	7 lb. 1 oz.	7 lb. 2¼ oz.	6 lb. 14 oz.
Day on which weight regained	9	9	9	9
Average loss . . .	7¾ oz.	6¼ oz.	7½ oz.	7½ oz.
Average gain from third day	10¼ oz.	8¾ oz.	10 oz.	9¾ oz.
Average net gain over birth weight . . .	2½ oz.	2½ oz.	2½ oz.	2¼ oz.

Table II.

Under 5 lb.	Multiparæ.		Primiparæ.	
	Males 0	Females 4	Males 2	Females 0
Birth weight . . .	—	4 lb. 13¾ oz.	4 lb. 4½ oz.	—
Weight third day . .	—	4 lb. 6¼ oz.	4 lb. 0¾ oz.	—
Weight regained . .	—	4 lb. 15½ oz.	4 lb. 5½ oz.	—
Day on which weight regained	—	5	8	
Average loss . . .	—	7½ oz.	3¾ oz.	—
Average gain from third day	—	9¼ oz.	4¾ oz.	—
Average net gain over birth weight. . .	—	1¾ oz.	1 oz.	—

TABLE III.

Under 6 lb.	Multiparæ.		Primiparæ.	
	Males 6	Females 10	Males 14	Females 18
Birth weight	5 lb. 10¼ oz.	5 lb. 9½ oz.	5 lb. 9¾ oz.	5 lb. 8½ oz.
Weight third day	5 lb. 6½ oz.	5 lb. 6 oz.	5 lb. 4½ oz.	5 lb. 2¾ oz.
Weight regained	5 lb. 12¼ oz.	5 lb. 11¾ oz.	5 lb. 12½ oz.	5 lb. 10½ oz.
Day on which weight regained	8	7	9	9
Average loss	5¾ oz.	3½ oz.	5¼ oz.	5¾ oz.
Average gain from third day	7¾ oz.	6¾ oz.	8 oz.	7¾ oz.
Average net gain over birth weight	2 oz.	2¼ oz.	2¾ oz.	2 oz.

TABLE IV.

Under 7 lb.	Multiparæ.		Primiparæ.	
	Males 23	Females 39	Males 35	Females 36
Birth weight	6 lb. 6¾ oz.	6 lb. 9½ oz.	6 lb. 9½ oz.	6 lb. 7 oz.
Weight third day	6 lb. 0¼ oz.	6 lb. 4¾ oz.	6 lb. 1¾ oz.	6 lb. 0 oz.
Weight regained	7 lb. 0¼ oz.	6 lb. 11½ oz.	6 lb. 11½ oz.	6 lb. 9½ oz.
Day on which weight regained	8	8	9	9
Average loss	6½ oz.	4¾ oz.	7¾ oz.	7 oz.
Average gain from third day	16 oz.	6¾ oz.	9¾ oz.	9½ oz.
Average net gain over birth rate	9½ oz.	2 oz.	2 oz.	2½ oz.

TABLE V.

Under 8 lb.	Multiparæ.		Primiparæ.	
	Males 46	Females 34	Males 33	Females 41
Birth weight	7 lb. 7½ oz.	7 lb. 6½ oz.	7 lb. 6¾ oz.	7 lb. 6¾ oz.
Weight third day	7 lb. 0 oz.	6 lb. 13¾ oz.	6 lb. 15 oz.	6 lb. 14¾ oz.
Weight regained	7 lb. 10½ oz.	7 lb. 9¼ oz.	7 lb. 9¾ oz.	7 lb. 8½ oz.
Day on which weight regained	9	10	9	10
Average loss	7½ oz.	8¾ oz.	7¾ oz.	8 oz.
Average gain from third day	10½ oz.	11½ oz.	10¾ oz.	9¾ oz.
Average net gain over birth weight	3 oz.	2¾ oz.	3 oz.	1¾ oz.

TABLE VI.

Over 8 lb.	Multiparæ.		Primiparæ.	
	Males 25	Females 13	Males 16	Females 4
Birth weight	8 lb. 8 oz.	8 lb. 4½ oz.	8 lb. 9 oz.	8 lb. 4 oz.
Weight third day	7 lb. 15½ oz.	7 lb. 13¼ oz.	7 lb. 15¼ oz.	7 lb. 10 oz.
Weight regained	8 lb. 10¼ oz.	8 lb. 6¾ oz.	8 lb. 11½ oz.	8 lb. 5 oz.
Day on which weight regained	9	8	9	12
Average loss	8½ oz.	7¼ oz.	9¾ oz.	10 oz.
Average gain from third day	11¼ oz.	9½ oz.	12¼ oz.	11 oz.
Average net gain over birth weight	2¾ oz.	2¼ oz.	2½ oz.	1 oz.

A CASE OF ECTRODACTYLISM ASSOCIATED WITH IMPERFECT DEVELOPMENT OF THE ARM.

By JOHN ALLAN, M.B., Ch.B.Edin.

THIS was a case in which the ring and little fingers of the left hand were absent. The child, a little boy aged 10 months, was poorly developed as a whole, and was small for his age. He came under treatment for enteritis and the deformity was then noted. The family history was carefully inquired into, but this proved negative. No history of any congenital anomaly either on the father's side or the mother's could be elicited, and the other children were free from deformity.

Associated with the deformity there was imperfect development of the limb, and this imperfect development was limited to the proximal part of the limb. The left arm was about 1¼ inches shorter than the right. A measurement from the acromial process to the external condyle of the humerus showed a difference of three quarters of an inch between the two sides, and a measurement from the internal condyle of the humerus to the radial styloid showed a difference of half an inch. The measurement from the radial styloid to the tip of the middle finger was the same on both sides. Not only was there this difference in the length of the arms, but there was some disparity in circumference between the two sides. The circumference of the limb taken about the middle of the left humerus was half an inch less than that of the right side. At the elbow-joints there was a difference of rather less than half an inch, at the middle of the forearms rather less than a quarter of an inch, and at the wrists practically no difference at all. The left hand was of course smaller owing to the deformity, but the rest of the hand seemed as well developed as that of the right side. The muscles of the left arm were soft and flabby, but the child could move it about quite freely. So far as could be judged there was no defect in the sensibility of the limb. The child had no other deformity.

The limb was examined with the X rays and the metacarpal bones and phalanges of the left ring and little fingers were seen to be absent. All the other bones were present, and the only thing of note that was observed was that the humerus, the radius, and the ulna appeared smaller than usual for a child of that age, that they were smaller than the corresponding bones of the right side, and that relatively speaking they were much smaller in comparison with the carpal and metacarpal bones and phalanges.

Ectrodactylism seems to be more uncommon than polydactylism. Why such a condition should occur is difficult to explain. The appearance of the hand did not give one the impression that the absent fingers had been developed and then undergone amputation during intra-uterine life. They appeared never to have been developed at all. Imperfect development of the limb is a common accompaniment, but the limitation in this case is interesting. The fact of its being an isolated case in the family is also of interest, as in cases of polydactylism one can trace the condition for generations back.

County Hospital, Ayr, N.B.

A CASE OF CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.*

By George Carpenter, M.D.Lond.,
Physician to the North-Eastern Hospital for Children,

and

P. Lockhart Mummery, B.C.Cantab.,
Assistant Surgeon to the North-Eastern Hospital for Children.

The specimen shown was removed from a female child aged 3 months. The infant was admitted into the North-Eastern Hospital for Children, under Dr. George Carpenter, on March the 31st, 1905.

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[*] The specimen was shown at the Society for the Study of Disease in Children, May the 5th, 1905.

It was born at term, the youngest of six living, and was breast-fed for the first two weeks, but nursing was discontinued owing to the formation of a mammary abscess. Vomiting sometimes occurred after suckling. The child was subsequently fed on milk and barley-water; the infant took the mixture well, and vomited but little. It steadily wasted, however, and was always very constipated.

On admission it was an anæmic, wizen-faced, marasmic infant, weighing 5¼ lbs. It had a furred tongue and some thrush. The abdomen was flat and soft, and nothing abnormal was detected. The temperature was 99° F. On March the 31st it vomited twice, and on April the 2nd twice. On April the 3rd an hour-glass-shaped peristaltic contraction was seen for the first time in the epigastrium. The wave passed from left to right and then disappeared, and at this time some regurgitation of the stomach contents into the mouth was noticed. On April the 5th the infant vomited three times, and on the 6th the peristalsis was again visible in the epigastrium, and it vomited once during that day, once on the 7th, twice on the 8th, but not on the 9th.

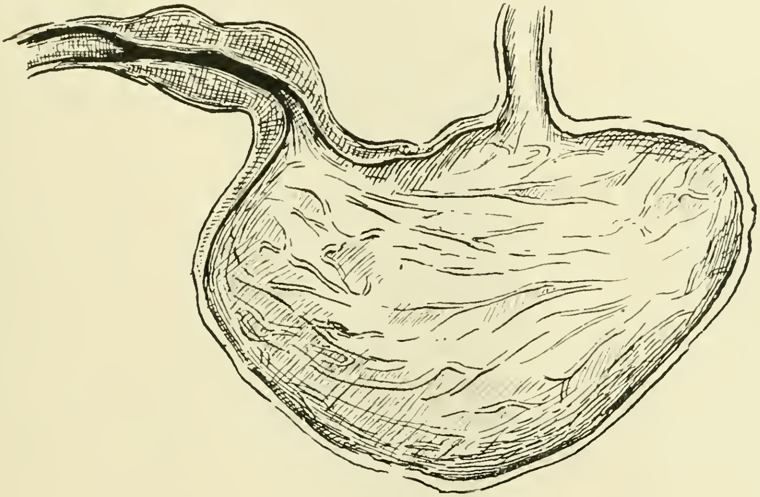

Fig. 1.—Longitudinal section of stomach and pylorus of a female child aged 3 months—natural size—showing hypertrophy of the pylorus and of the adjoining muscular coat of the stomach.

On the 10th it weighed 5 lbs., a loss of ¼ lb. since admission. About one inch above the umbilicus, and to the right of it, a hard cartilaginous mass, about the size of the terminal phalanx of the little finger, was felt lying deep in the abdominal cavity. The mass could be picked up between the finger and thumb through the abdominal wall. Manipulation of the abdomen caused regurgitation of food into the mouth, and simple flicking of the abdominal walls with the finger brought on visible peristalsis without hour-glass contraction. The stomach was dilated, its lower border being below the umbilicus, and the peristaltic waves passed from left to right and terminated at the right.

Dr. George Carpenter decided to have the infant operated upon, and Mr. P. Lockhart Mummery performed pyloroplasty on April the 11th. The infant was kept very lightly under chloroform, and an incision was made in the abdomen over the position of the pyloric swelling. A cut about $1\frac{1}{2}$ inches long was made through the pylorus, and this wound was then sewn up in the opposite direction over a small Mayo Robson's bone bobbin. The operation took about twenty-five minutes to complete. The child rallied well after the operation. Its pulse remained good during the night, and it took drachm doses of milk and barley-water half-hourly without returning them. It died, however, on the following morning. The post-mortem examination showed that a free opening had been established through the pylorus.

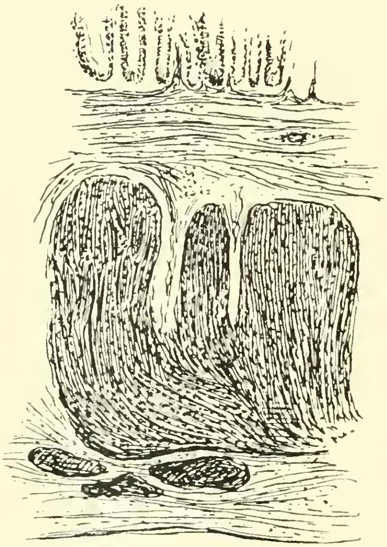

FIG. 2.—Longitudinal microscopical section of the thickened pylorus of female infant aged 3 months.

There were several points of interest about the case. The toughness of the hypertrophied portion of the pylorus was remarkable;

the walls cut like the cartilage of the knee. It was also noticeable, on looking at the specimen, that the hypertrophy of the muscular coat extended for some considerable distance into the stomach.

Clinical Memorandum.

CASE OF EXOPHTHALMIC GOITRE IN A CHILD, AGED 3½ YEARS.*

By Charles Batchelor, M.R.C.S., L.R.C.P.

The patient was the only child of healthy parents, in a good position of life. There was no family history of insanity or neuroses. She was perfectly healthy until she had whooping-cough in the early months of 1901.

In June of that year, at the age of 3 years and 1 month, it was noticed that her eyes were prominent, and she had attacks of passion, which had never been pronounced before.

On her return from the seaside in September, I found that she had very definite exophthalmos, with decided enlargement of the thyroid, the right lobe being larger than the left. There were no tremors, but the heart's action was rapid, and the attacks of passion, with loud screaming, were much more frequent.

In March she had an attack of influenza and pneumonia, and was in a most critical condition for several days.

During the summer the exophthalmos became even more pronounced. The child was generally breathless on exertion, and the heart's action always rapid (120–140 beats per minute), with marked pulsation of the carotids, but there were no murmurs, and never albuminuria. The prominence of the eyes varied slightly from time to time, but the eyelids always closed during sleep. Von Graefe's sign was present. I was never able to discover any tremors.

In 1904 she had two or three attacks of sickness, which produced great prostration, and on September the 24th she was attacked with diarrhœa, followed by uncontrollable vomiting, and she died from exhaustion on September the 26th at the age of 6 years and 4 months.

Staines.

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* Communicated to the Society for the Study of Disease in Children, April the 14th, 1905.

Editorial.

OPEN-AIR TREATMENT OF ACUTE DISEASE IN CHILDREN.

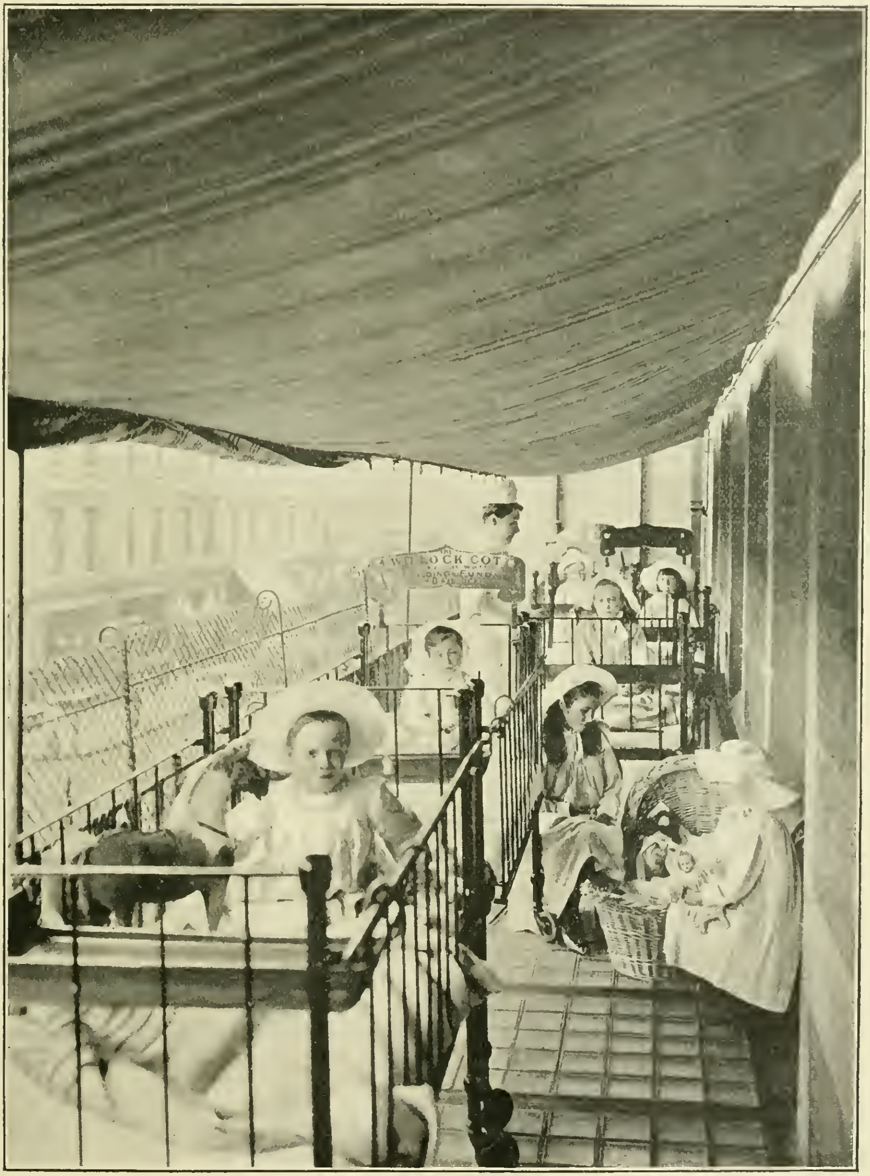
The vital importance of fresh air for sick children cannot be over-estimated, and yet how difficult to bring this truism home to the laity!

The majority of people are still firm believers in draughts and chills as the cause of most maladies, and that fresh air in the treatment of ailments, especially of the chest and throat, is a thing to be carefully avoided.

To physicians who are advocates of fresh air and plenty of it, and who see their little patients in well-ventilated consulting-rooms, it frequently happens that the mothers, and nurses quite as often as the mothers, hesitate to undress their children for the necessary physical examination until the offending window be closed. "The baby will take a chill," they say, and point with alarm at the open casement, however hot the day and muggy the atmosphere, and frequently to pacify them the window has to be closed, or the object of their visit would be rendered nugatory. Mothers, specially those who have notions, cannot be taught simple rules of hygiene against their will; knowledge of this kind has to gently trickle through the interstices of their intellectual centres; it cannot be hammered into them with advantage.

In situations far removed from the consultant's dwelling in the town and in the country it is no uncommon experience for the specialist whose assistance has been sought to find the sick child dying from fresh-air hunger, starving for Nature's chief medicine for the young—fresh, pure air and plenty of it.

The panting infant with pneumonia, swaddled in innumerable wrappings—often poulticed and steamed to death—over-heated and parboiled, with windows tightly closed, and anxious relatives and friends surrounding it, consuming the air necessary for its recovery, and not alone consuming it, but filling it with poisonous animal exhalations, is no uncommon experience for those whose profession takes them into the child's sick-chamber.



North-Eastern Hospital for Children. Open-air balcony, Medical side.

What is wanted here is doors and windows flung widely open—ay, the child should be placed in the open air if possible—the relatives to be anywhere rather than in the sick-chamber, a paucity of clothing in exchange for a superabundance, and associated with these radically altered conditions of management the all-important skilled medical attendance and a nurse who has been taught and understands obedience.

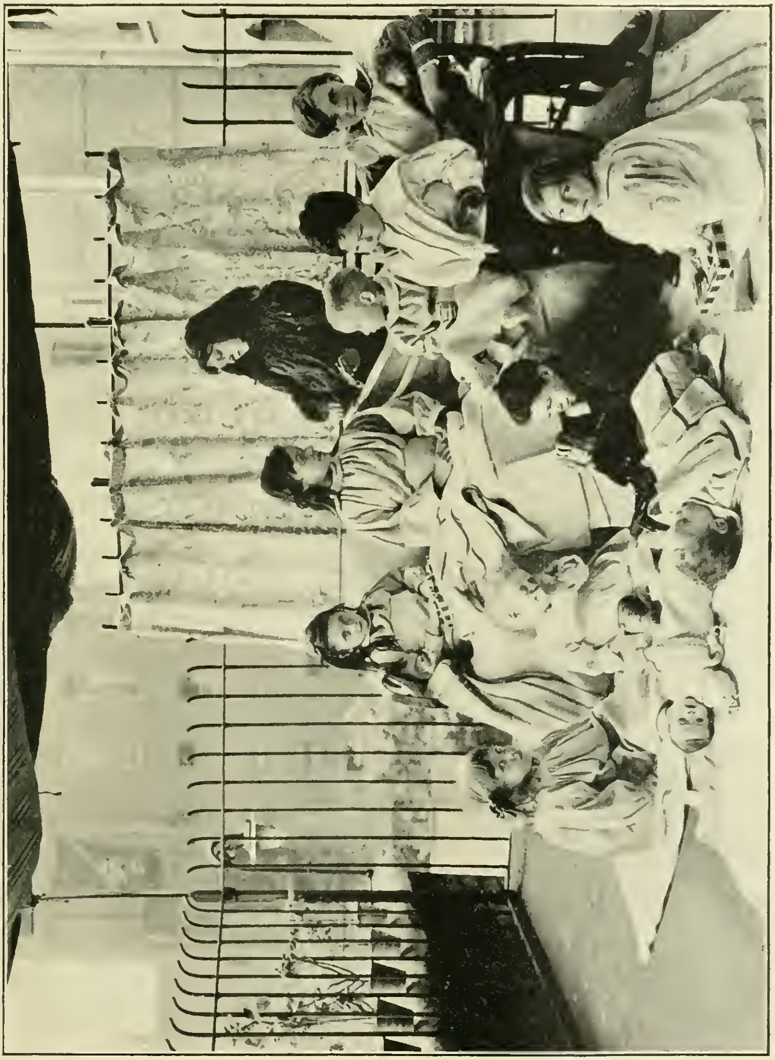
From the private sick-room of the children of the well-to-do to the children's hospital—the sick-room of the necessitous poor—is but a step. In the out-patient department the same unwillingness of mothers to expose the ailing infant's body to the pure warm summer air that finds its way through the open window, for fear of it taking a chill, is a frequent experience.

When patients are admitted into the wards of the hospital they are, as a matter of course, treated to as much fresh air and to as frequent renewals of the air as the environment and structural design of the building will permit.

The North-Eastern Hospital for Children in the Hackney Road has advanced several steps ahead of similar institutions in the fresh-air cult by reason of its foresight and public enterprise in providing open-air treatment for acute diseases as well as chronic maladies in its new buildings.

A striking feature of this institution is its open-air balconies for the children which front the main building and of which we give three illustrations. Here all through the summer months the sick children may be seen lying out of doors in their cots and the ordinary operations of the wards being conducted in the open air. In this hospital, owing to the progressive action of its medical staff and to the enterprise of its House Committee, cases of pneumonia, of enteric fever, of summer diarrhœa, and other acute maladies have been treated in the open air day and night and with the greatest benefit to the patients. It has been found experimentally that certain classes of disease have not been amenable to this form of treatment in the front of the hospital—thus cases of heart disease did not readily respond to treatment—but this was due to the noise and bustle of the traffic in the populous street below in its passage over the stone blocks of the roadway.

These cases have done remarkably well since their treatment has been conducted in the open air at the back of the hospital, removed from sight of the busy traffic and from the sounds incidental to a densely populated and, for hospital purposes, unsuitably paved East End London thoroughfare.



North-Eastern Hospital for Children. Open-air balcony back of building, Medical side.

The Mayor and Corporation of Bethnal Green, in whose district this hospital is situated, would materially aid the work of the institution by paving the street fronting the building with hard wood instead of stone. Moreover, it may be stated that the difficulties of making a medical examination of the children in the wards at the front of the hospital are very great owing to the noise.

The balconies as fresh-air resorts have been found especially useful to young children who are convalescing. Such children would without doubt be far better at the seaside or in the country fields than on balconies in the Hackney Road; but unfortunately children under 3 years of age cannot gain admittance at Convalescent Homes, and for such as these the North-Eastern Hospital for Children has proved a great boon. Delicate, puny, wizen-faced children have put on flesh and become rosy-looking and buoyant after a short course of the balconies, and this would certainly not have happened to these delicate mites had they been drafted straight away to their homes in the slums.

The benefits therefore which have been conferred on the poor children of the district cannot be over-estimated. The North-Eastern Hospital for Children will, we understand, before long be in possession of a country branch—the first of its kind in the Metropolis—in the charge of its London medical staff, and this through the untiring exertions of 'Little Folks,' for so long a period most generous contributors to the hospital's funds. Until this much-needed adjunct can be inaugurated we would suggest to the Committee of Management of this hospital that as their efforts in the past have been attended by such striking success, they should make renewed exertions to extend in London the fresh-air system of treating disease, and that provision should be made forthwith for balconies and other open-air accommodation for patients in the old hospital building.

For quite a long time it has been our custom in private practice to treat and to advocate the treatment of acute disorders by a bountiful supply of fresh air, and in the open air whenever possible, and with most gratifying results, especially so in lung complaints, and we are in sympathy therefore with the enlightened policy of this institution. It is to be hoped that such treatment in the future

North-Eastern Hospital for Children. Open-air balcony, Surgical side.

will be a feature of the North-Eastern Hospital for Children, and that when the time has arrived for starting the machinery of the country branch certain cases will be despatched there by motor for treatment in the open.

The increasing need in large cities for the treatment of chronic illness by fresh air has been realised in Liverpool. In 1899 a ward containing twenty beds was opened for this purpose at the West Kirby Home for Convalescent Children, a Cheshire sea-side resort. Ere long a permanent hospital will be erected capable of accommodating 200 cots. A bird's-eye view of the Liverpool Country Hospital for Children, as it will be when completed, appeared in 'The British Journal of Children's Diseases' of April, 1904. For the greater part of the day the children at West Kirby are, when weather permits, in the open air, and when it is wet and cold they are sent to a well-appointed sun-room. In the summer the medical officers visit many of their cases in the grounds of the hospital.

But after all, this scheme, like others, only deals with the more chronic cases of childish illness. The advantage of treating acute illnesses in the open air has not been put in practice in a children's hospital before, and it has been reserved for the North-Eastern Hospital for Children to act as a pioneer of the open-air treatment of acute disease among similar institutions.

The opportunities for doling out fresh air to sick children in London and elsewhere are singularly few. Londoners are possessed of a large river, with great possibilities as a health resort for its sick children, of which little or no advantage has been taken by philanthropists. Father Thames carries on his broad bosom in the lower reaches a plentiful supply of ozone which can be had for the asking and could be inhaled with benefit by the sick. There are many large steamers to be seen lying idle in London's great waterway and other large seaports which might, with profit to their owners and advantage to suffering humanity, be turned into summer floating hospitals for sick children.

As long ago as July, 1875, the first trip of the "Floating Hospital of St. John's Guild," of New York, was made, carrying 1,000 or more sick babies, small feeble children, and sick and exhausted mothers, for the care and cure of the babies and children suffering from summer ailments and for the practical instruction by trained nurses of the, too often, ignorant mothers.

The special summer corps of physicians of the Health Department, dispensaries, out-patient departments of great hospitals, day nurseries, and charitable societies in great number gladly avail themselves of the opportunity to distribute tickets for the floating hospital, which must be signed by a qualified medical man.

Each ticket admits a sick baby in its mother's arms, and any little brothers or sisters under 6 years of age that could not be left at home. Six trips from the city are taken weekly by this floating hospital, which leaves at 8 a.m. and returns at 6 p.m. Doctors and trained nurses attend the very sick in the wards, while those who are merely ailing are distributed on a spacious upper deck. The ship is anchored a mile from the shore on its arrival at New Dorp, Staten Island, so that its patients may inhale the fresh and unadulterated Atlantic breezes. Those whose condition requires it are taken from the ship by a launch to the Guild's Seaside Hospital for Children, a spacious building, provided with wide balconies, facing the ocean, and remain there until cured, the average stay being about ten days. This hospital, which is situated on the beach some 200 yards from the sea, was erected in 1882, and is open during the summer months only.

In this way the great New York charity places fresh air at the disposal of suffering little slum children. The London children's hospitals and children's hospitals in our great cities are all in urgent need of fresh air for the more successful treatment of their cases. This, Nature's most potent remedy, is, unfortunately, denied to many of them from lack of funds. Not least among deserving institutions—and they are very numerous—is the North-Eastern Hospital for Children, situated as it is in a very poor and densely populated neighbourhood of London, and with large and ever increasing calls upon its slender finances. Contributors to its Fresh Air Fund will certainly receive value for their donations in the shape of good flesh and blood for East End infantile sufferers, and in contributing will add their mite to the sum-total of improved national physique.

Abstracts from Current Literature.

Medicine.

Jealousy in children (*Soc. de Physiologie et de Psychologie, January* 17, 1905, '*Arch. de Neurologie,*' *May*, 1905, *p.* 395).—**Berillon** read a paper on this subject, and described several cases. Morbid jealousy was always accompanied by deficient will-power. The cases improved considerably after psycho-therapeutic suggestion. A. Ernest Jones.

Hysterical monocular amblyopia ('*Arch. de Neurologie,*' *May*, 1905, *vol.* XIX, *p.* 338).—**R. Cruchet** describes at great length the case of a girl, aged 14 years, who suffered from this symptom. She had had in the right eye two years before a phlyctenular keratitis, which lasted for many months. When examined she was found to have a slight right-sided hemiparesis, with complete superficial anæsthesia to all forms of stimulation; an interesting feature in this connection was the fact that thermic sensation returned in the hand whenever the stereognostic sense came into play. Taste and smell were absent on the right side, and audition was greatly blunted. The eyelids were natural on the two sides; no strabismus or nystagmus was present. The right cornea and conjunctiva were anæsthetic, and the globe on that side was insensitive even on deep pressure (Abadie-Rocher sign of hysteria). The pupils were equal and reacted well. On closing the left lid the right one became violently tremulous, and remained so until the left was again opened, while the right pupil showed hippus and dilated to a much greater extent than the left did under similar conditions. The right eye was almost completely blind; it was impossible to read J. 1 or $\frac{6}{60}$. There were micropsia and dyschromatopsia in the right eye, but no diplopia; accommodative power was greatly reduced in that eye. There was concentric diminution of both fields, more on the right. By a series of ingenious experiments, which are fully described, Cruchet demonstrated indisputably that during binocular vision the right (amblyopic) eye could see perfectly, and that its micropsia and dyschromatopsia disappeared. This is in accord with most of the cases described (by Janet, Parinaud, Pitres, and others). But the interesting point about this case is that the amblyopia not only disappeared during binocular vision, but whenever the opposite left eye remained open; in fact, the amblyopia only appeared when the left side was shut. Thus various tests showed that if the healthy eye was blocked, consequently putting binocular vision out of the question, the right eye still saw perfectly, but as soon as the healthy eyelid was closed amblyopia appeared on the right side. further experiments demonstrated that this amblyopia was not to be correlated with the motor action of occlusion, but with the physical interception of white light that this occlusion imposed. A. Ernest Jones.

Familial heredo-spinal atrophy (Friedreich's type). A clinical and pathological study ('*Journal of Mental Pathology,*' 1904, *vol.* VI, *Nos.* 1–5).—**G. Mingazzini** and **G. Perusini,** of Rome, contribute an article of 68 pages, 13 of which are lists of references on this subject. They first of all describe fully three cases observed clinically. A complete pathological study is appended of one case—the only one that died. In this examination the usual diffuse changes were found; Déjerine's bourbillons were chiefly present in Goll's columns, the area most affected; the cerebellum was intact. Clinically the authors accept Soca's synopsis of the disease. In this ataxic gait, two-shaped feet, impairment of speech are regarded as the three cardinal symptoms. Involuntary movements, scoliosis, and the occurrence of nystagmus, with intact iris reactions and ocular movements, are also important; abolition of the tendon reflexes, integrity of the sphincters, absence of pain, onset during infancy, and familial characters complete the classic picture. The limitation of the frontiers of Friedreich's disease is not, however, so easy. Raymond recently has divided it into three forms—the integral, abortive, and hybrid. A great deal of controversy has taken place as to whether Marie's cerebellar heredo-ataxia and Friedreich's heredo-spinal ataxia are two affections that can be distinguished from each other, or whether they are two clinical types of the same disease. The latter view is rapidly gaining ground for the reason that all intermediate forms can be demonstrated. All the differentiating criteria that have been proposed have one after another been discredited. Thus the classic disturbances of vision described in 1893 by Marie in his syndrome, and consisting of dyschromatopsia, contraction of visual fields, and diminution of visual acuity due to papillary atrophy, have been shown by Brissaud and Londe to be absent in cases of this syndrome; again, many cases of Friedreich's type have been described (and are detailed by the writer) presenting these very disturbances and even partial external ophthalmoplegia. So also the tardiness of onset of Marie's type that Brissaud laid stress on gives way in the face of thirteen cases of Friedreich's type with a similar onset. Again, the increase of the deep reflexes in Marie's type as opposed to this diminution in Friedreich's type, a point that Londe considered of the greatest importance, is in many recorded cases not consonant with the other phenomena. To insist on a distinction between the two forms at all costs is therefore not practicable, especially when we remember the many points they have in common. So much for the hybrid form. The integral form is then described, and the relative importance of frequency of its component symptoms discussed. Flashing pains and slight diminution in sensory acuity are more often met with than used to be supposed. Tracheal and testicular analgesia are important signs, as in tabes. Last, the pathological anatomy and pathogenesis of the affection is considered. No novel conclusions are arrived at here, as the work is mainly a summary of previous facts and hypotheses. A. Ernest Jones.

Tuberculous meningitis in infants ('*Allg, Wiener Mediz. Zeitung,*' 1905, *No.* xxi, '*La Medecine Moderne,*' 1904, *No.* xli).—**Mery** reports the case of a child, aged 2 years, which after one week's vomiting and constipation showed marked clonic convulsions of the muscles of the face and arms. Kernig's sign was absent. He lays stress on the sudden onset of the disease and the repeated absence of such signs as emaciation, retraction of the abdominal walls, and contractures. The tendon reflexes are increased, and the pupils, at first small, enlarge slowly and then become fixed.

D. O'C. Finigan.

Cessation of epilepsy after removal of adenoids ('*The Practitioner,*' *May,* 1905).—**St.Clair Thomson.**—A girl, aged 6 years, had suffered from attacks of petit mal for two years, and had more recently been observed to be deaf and a mouth-breather. She was referred to Dr. Thomson by Dr. Ferrier, who considered that the epilepsy would be benefited by the removal of the post-nasal trouble. A large mass of adenoids was removed, and within a few months of the operation the fits ceased entirely, and there had been no recurrence during the following seven years. The great improvement in the child's appearance is shown by photographs before and after the operation, the typical adenoid facies having been completely changed to one of normal intelligence. Dr. Thomson very properly claims that in this case relief from the epilepsy was due to the operation, although he admits that in other cases he has not had the same success. In all cases of epilepsy in children the rule should be to search for and remove, if possible, any source of peripheral irritation. G. A. SUTHERLAND.

Erratic erysipelas ('*Journal de Med. de Bordeaux*,' *April* 16, 1905).—**E. Auche.**—An infant, aged 2 months, when admitted into a foundling hospital was in good health; the next day, without any recognisable cause, one hand and forearm presented an inflammatory swelling; this increased and extended as far as the shoulder. In four days it began to disappear, the buttocks then becoming similarly involved by the inflammation, which extended to the legs and feet. Next the other arm became affected, and three areas appeared on the trunk. The affected parts lost their redness as the swelling disappeared, which was followed by desquamation in large flakes; this in turn was succeeded by œdema, of a white colour, which long retained the impress of the finger. The temperature was at first raised; it gradually fell. The patient died in three weeks. Microscopic examination of the skin showed the epidermis to be only slightly affected, as was also the superficial layer of the corium, while in the deeper layers and the subcutaneous tissue there was extensive serous infiltration and cells deposited, especially round the blood-vessels. The lymphatics were dilated and contained lymphocytes and polynuclear leucocytes. The streptococcus which was found occurred in short chains. Inoculation in a rabbit caused subcutaneous erysipelatous inflammation. T. P. BEDDOES.

Bronchiectasis in children ('*La Pediat. Pratique*,' *May* 1, 1905).—**Hutinel** says this subject has been insufficiently studied, because in children the condition does not entail the disturbances which reveal its presence at a more advanced stage. Consisting, in serious cases, of ampullary dilatations, and in the most favourable of enlargements of the bronchial tubes, it may only reveal itself during an acute attack of catarrh, and it is capable, owing to the progressive development of the lung, of diminishing, or even of disappearing. The most frequent cause is whooping-cough, complicated with bronchopneumonia and pleuritic adhesions. In some cases it seems congenital, and the lung has then the appearance of cystic dilatations with serous contents, close to one another and superficial. Bronchiectasis is met with at all periods of infancy, particularly between 3 and 5 years; boys are more predisposed to it than girls, and it does not occur only in the badly nourished or debilitated, but, owing to an hereditary or acquired disposition, in infants subject to spasmodic cough. Often the lesion attacks only one lung, generally the left; it is exceptionally bilateral. Its seat of predilection is the posterior and inferior part. The cavities are superficial, sub-pleural, so that the bronchioles, instead of getting narrower, become enlarged into ampullæ at their extremity. Two forms exist: in grave cases the cavities are round or oval, varying in size from a pear to an almond; in other cases the dilatations are regular and cylindrical, so that when the lung is cut across a collection of uniform round orifices are seen, or if cut longitudinally, a number of parallel or divergent tubes; this latter form, being common in bronchopneumonias of long duration, is more usual, but less characteristic, than the former. No ulcerations are seen, and histologically the epithelium is not often altered, but there is a marked dilatation of the submucous vessels forming a thick continuous network. In the contents Friedlander's bacillus is most commonly found, staphylo- and streptococci being much less frequent than would be supposed. The pneumococcus is fairly common, sarcinæ rare, Koch's bacillus altogether exceptional. The lesions develop insiduously; the usual history is that after a long attack of bronchopneumonia the child's cough remained, at times seeming cured, cough and dyspnœa disappearing, having no fever and looking well; on the least cold the cough recommences and acquires a spasmodic character; expectoration and fever appear only occasionally, and one is struck with the discrepancy between the general and local conditions, for instead of sonorous rhonchi and mucous râles, one is surprised to find gurglings and blowing breathing. Expectoration, which in the adult is often sufficient to clench the diagnosis, is absent in cases under 8 years; it is less fœtid, never contains Koch's bacilli; hæmoptysis and fœtid breath are exceptional. Cough is, as a rule, spasmodic, provoking sickness, more frequent in the morning. Apart from bronchitis there is no dyspnœa. Examination may detect a slight retraction of one side, resonance is generally modified, and absolute dulness may exist. When the bronchi contain muco-pus there are moist and subcrepitant râles, even metallic or cavernous; vesicular murmur, always more or less modified, first blowing breathing, later cavernous; temperature is normal, unless raised by an acute attack of catarrh. The dilated bronchi form a favourable soil for the development of infections; hence pulmonary abscess, articular suppuration, pseudo-rheumatism, hepatic abscess, infectious endocarditis, and abscess of brain or purulent meningitis may supervene. On the contrary, pulmonary gangrene and empyema are altogether exceptional. It is generally difficult and sometimes impossible in a child to distinguish bronchial dilation from simple catarrh; the expectoration has neither the abundance nor the characteristics that it has in the adult, the breath and sputum are rarely fœtid, dyspnœa and cyanosis are exceptional. The patients cough, but without attracting attention to it. The physical signs are of much more value than the functional trouble, but they, too, may lead astray. In the period of calm, when the bronchi are not inflamed and do not secrete, the timbre of the respiration is rarely sufficiently modified to raise a suspicion of bronchiectasis, but rather of tracheo-bronchial adenopathy so frequent in the young. During acute attacks of catarrh the case at first sight suggests a bronchopneumonia of long duration, a pleurisy, or especially tuberculous infiltration. Cure is not possible, but the prognosis is less grave than in the adult, since the lungs will increase while the dilated bronchi remain the same size, so that in the end they are almost normal. With ampullary dilatations amelioration is less probable, though the infant rarely dies of it, but of some intercurrent affection. Treatment is that of catarrh, benzoate of sodium and the balsams being useful; the sulphur waters of Cauterets or Zuchon, compressed air baths, respiratory exercises, with attention to general hygiene after the acute signs have disappeared.

VINCENT DICKINSON.

Pathology.

Intra-ventricular cerebral hæmorrhage in a boy, aged 12 years (*'Bull. Soc. Med. des Hôp. de Lyon,' May* 31, 1904; *'Arch. de Neurologie,' May,* 1905, *p.* 381).—**Gallavardin** and **Tambon** give a full account of this case. The boy had had five attacks of chorea in five years. In a stroke right hemiplegia and aphasia developed. Seven days afterwards a second apoplectic stroke occurred, and death took place in two days, hyperthermia being present. At the autopsy mitral stenosis was found, and there were infarcts in the kidney, spleen, and left Sylvian artery. A hæmorrhage on the right side had ruptured into the ventricles, and it had started from a suppurating embolus. A. Ernest Jones.

Congenital syphilis and the spirochæte pallida ('*La Presse Médicale*,' 1905, *No.* 43, *p.* 337).—**C. Levaditi,** of the Institut Pasteur, has published the results of his researches in three cases: (1) He found the organism in the vesicles of hereditary syphilitic pemphigus, and in the cutaneous papules at the onset of their development. Examination of the blood was negative. (2) He found it in the spleen, lung, cutaneous papules, and specially in the liver of a new-born child, who died fifty-three days after birth, the offspring of a syphilitic mother. The liver was enlarged, hard, and pale yellow in colour, the spleen hypertrophied, the kidney and lung congested. Papules upon the face and right side of thorax. (3) He found it in the spleen and specially in the liver and pemphigoid lesions of an hereditary syphilitic child born with plantar and palmar pemphigus, and who died some hours after birth. The liver was soft and dark red, the spleen slightly hypertrophied. The slow method of Giemsa, recommended by Schaudinn, was adopted to demonstrate the presence of spirochætes. The author considers that from these cases it must be admitted that, during the intra-uterine life of the fœtus of the syphilitic mother, the parasite penetrates by means of the blood-stream from the maternal organism to that of the fœtus, to localise itself in the cutaneous system and there to give rise to the histological modifications which characterise congenital syphilis. Granting this, there is every reason to suppose that the fœtal organ, which is subjected in a most marked fashion to the attack of the spirillary infection, must be the liver, as is confirmed by these researches. The distribution of the parasites in the different organs proves, moreover, that the blood is merely a vehicle and not a medium, where the parasite develops for preference; otherwise it would not be easy to explain why the spleen and lungs, organs rich in blood, contain such a relatively small number of spirochætes. Control researches were made in a case of eczema of the head and in a child that died of broncho-pneumonia two days after birth. Ordinary lesions, such as acne and simple erosions in offspring of syphilitic parents, did not present the spirilla of Schaudinn. Thus hereditary syphilis is a spirollosis of the new-born, having several points in common with the spirillary infection of man and of animals as known at present such as relapsing fever, spirillosis of geese (Sacharoff), spirillosis of fowls, (Marchoux and Salimbeni). Vincent Dickinson.

Microbiological researches on syphilis ('*Le Bulletin Médical*,' *May* 17, 1905, *p.* 441).—**Metchnikoff** and **Roux.**—The various micro-organisms which have been put forward by their respective discoverers as the cause of syphilis already reach quite a respectable figure. The latest Richmond in the field is a spirillum or spirochæte. Before going any further into the subject, it is well to bear in mind at the present stage, whatever the future may have in store, that the open mind, tempered by scientific scepticism, is the proper stand to take. Seeing that one parasite after the other has been thrown overboard, there is a natural tendency to go too far in the other direction and agree with the man who did not believe in ghosts because he had seen so many.

Following this up, Metchnikoff and Roux have read a paper bearing on the matter. In the early part of the present year Siegel, a German zoologist, described a minute protozoon which stained by means of azure blue and eosin, and which he considered was the cause of syphilis. Although there was little foundation for this opinion, the matter was taken up by Schaudinn, whose work on the Trypano-soma group is well known. By staining in the same way material obtained from primary sores he found fairly numerous spirilla. This led him to continue the investigation with the medical co-operation of Hoffmann.

Many years ago, however, spirilla were described as occurring in lesions of the genital organs and also on the normal mucous membranes of those parts. Donné in 1837 expressed the opinion that these spirilla were the cause of syphilis, although it is quite certain that, given the means at his disposal at that time, he could not have seen the minute corkscrew-like micro-organisms described by Schaudinn.

Since then spirilla have been found in the smegma by Alvarez and Favel, in the material obtained from cases of balano-posthitis by Berdal and Bataille, and more recently in gangrenous lesions of the genitalia by Roná. The last-named also discovered spirilla in primary sores, but he did not attach any etiological significance to them, for he had found them in non-syphilitic lesions, as also in the smegma.

Schaudinn asked himself at first if the spirillum found by him was not perhaps the same as that described by forerunners. But his special knowledge of spirilla led him to consider there were perhaps two species, one of which was found in various conditions, including syphilis, whilst the other was present only in syphilis. In a later paper Schaudinn insisted on this distinction, giving the name of *Spirochæte refringens* to the former, the larger of the two, and of *Spirochæte pallida* to the latter, which was very minute. According to Metchnikoff and Roux, it is the former kind that previous observers have mainly described, the *specificit* of the latter, although possibly seen by them, having escaped them. They know, however, of only one instance in which *Spirochæte pallida* had been observed before Schaudinn. That was three years ago, when Bordet and Gengou, of Brussels, found by means of Kühne's carbo-methylene blue, followed up by Nicolle's carbo-gentian violet, a fairly large number of spirilla in the case of a hard chancre. They continued their researches in this direction; but having failed to find the spirilla in five other cases of hard chancre, and obtaining negative results also in the case of the inguinal glands, papules of the skin and the blood, they became discouraged and gave up the investigation. Although they found the same spirillum in a syphilitic mucous patch of the throat, they did not care to describe the micro-organism as the cause, seeing that in the normal throat very similar spirilla are found. Metchnikoff has examined one of Bordet's old preparations, and he has been able, not without difficulty, to confirm the complete likeness of the spirillum to *Spirochæte pallida*.

When Metchnikoff made known his first results as to the inoculation of the chimpanzee with syphilis, Bordet mentioned the results of his microscopical investigation. This led Metchnikoff to look for the spirilla in the syphilitic products derived from lesions in the ape. The contents of the minute vesicles which sometimes first appear at the seat of inoculation were examined, but with negative results. Metchnikoff concluded the spirilla were not the cause of syphilis. But the researches of Schaudinn have stimulated Metchnikoff and Roux to take up the line of work again.

Howbeit, Schaudinn and Hofmann are very reserved in their conclusions and state nothing definite as to the etiology of syphilis. Further work is required, especially as in lesions of syphilised monkeys no spirilla have been discovered by Kraus of Vienna, or by Schaudinn, to whom the preparations were submitted. On the other hand, Metchnikoff has found them in the case of a *Macacus cynomologus*, but not in another animal, syphilised in the same way. Nor have the spirilla been found in the blood of syphilitics.

More recently, Metchnikoff has found a few spirilla in the products of the primary sore of *cynocephalus sphinx*, and more recently still, in the case of one of the chimpanzees, but only after very laborious examination. Altogether Metchnikoff states he has had positive results in four cases. As to man, the same observer has found the pale spirilla in four of six syphilitic cases examined, but he failed to do so in non-syphilitic human cases (psoriasis, scabies, acne). Up to the present it has not been possible to cultivate the *Spirochæte pallida*, so that important links in the chain of evidence are still wanting. In the meantime there is good ground for pursuing the investigation. George Pernet.

Therapeutics.

Oxygenated water in the treatment of infantile dyspepsia (*'La Pediatria,' April*, 1905, *p.* 317).—**Gallois, Flourens,** and **Walter** have used water oxygenated to 12 volumes in two different ways—either adding a tablespoonful of it to a litre of boiled water and diluting the milk with this mixture, or, more conveniently, pouring 10 drops of oxygenated water to a bottle of 100 grammes of milk. For breast-fed infants they prescribe 2 or 3 drops of oxygenated water in a coffee-spoonful of milk, to be taken just before suckling. By these means the oxygenated water was readily taken, and the therapeutical result was satisfactory, especially where vomiting was a prominent feature in the case. The vomiting, however, was not immediately arrested after using the remedy, but only after twenty-four to forty-eight hours, showing that it acted more against the dyspepsia producing the vomiting than on the latter directly. One advantage of this remedy is that it can be used at the same time as milk feeding, or suckling, reserving special diet for serious cases. Oxygenated water was less active in diarrhœa in hospital practice, but in private practice was often attended with good results, perhaps owing to the hospital cases being more serious. The formula adopted was: Milk, gr. 100; boiled water, gr. 50; sugar, gr. 5; oxygenated water, gtt. xx. The conclusion to be derived from this is that milk, with the addition of oxygenated water (12 volumes), in the proportion of 1 per cent., seems to acquire properties similar to Kephir; it checks vomiting and diarrhœa, and is readily taken by children; it acts on the stomach as eupeptic, and is a powerful antiseptic. Vincent Dickinson.

The influence of milk treated with cow's serum on intestinal bacteria (*'La Pediatria,' April*, 1905, *p.* 250).—**G. Silva** records his experiments in the children's clinic at Padua thus: (1) The addition of cow's serum, glycerinated to 10 per cent. obtained by bleeding, to cow's milk, modifies the intestinal bacteria in dyspeptic children, and causes an approach to the type found in breast-fed infants. (2) The same effect is also produced but in a less degree when cow's serum formalinised to 1 per 1000 is used. (3) This effect is permanent only when the serum used has been freshly obtained within twenty-four hours, whether used with or without glycerin or formalin. (4) The result is identical whether arterial, venous, or mixed serum is used.

VINCENT DICKINSON.

Cotton wool in the treatment of foreign bodies which have been swallowed ('*Med. Press and Circular,*' *June* 14, 1905).—**W. Blair Bell** reports two cases of children who had swallowed foreign bodies, and whom he successfully treated by the internal administration of absorbent cotton wool. (1) An infant, aged 18 months, had swallowed a gold brooch with the letters B A B Y sticking out on all sides. The child was given a small handful of absorbent cotton wool, finely teased up, part in milk food and part in jam sandwich, followed some hours later by a dose of castor oil; the result being a copious motion in which were several egg-shaped lumps of cotton wool, and in the middle of one of these was firmly packed the brooch. (2) A boy, aged 4½ years, had swallowed a small brass bed knob. This, being smooth, was left alone for a couple of days, but on the third day a skiagram was taken and the knob seen to be still in the stomach in spite of castor oil and plenty of food, so the same treatment with cotton wool was resorted to with the same good result. Dr. Bell considers the wool may act in one of two ways: (*a*) either by directly enveloping the foreign body, or (*b*) by matting the fæces together around it. He thinks this method of treatment should be employed as a routine practice.

ALEC H. BREWER.

On the treatment of capillary bronchitis with mustard-and-water packs ('*Die Therapie der Gegenwart.,*' *January*, 1905).—**O. Heubner** has employed this mode of treatment for years in those acute and rapidly leading to asphyxiation cases of extensive sero-purulent catarrh of the smallest bronchioles, which are especially common in measles and pertussis and in weakly children with rachitic thorax. The patient lies prostrated with an enormously increased ratio of respiration (70–80 in the minute), with small and very frequent pulse, and with a varying amount of fever. The treatment of this very serious condition consists of the following procedures: About half a pound or more of fresh mustard-powder are stirred in an open basin in about a pint of water of about 103° F., until the volatile oil rises to the surface and begins to irritate the eye and nose; this will take about ten minutes. A linen cloth big enough to wrap the child into is immersed into this water, fully impregnated with it, and then wrung out. It is now placed on to a woollen cloth of corresponding size. The child is placed naked in such a manner on to the mustard-cloth that its neck lies against the upper edge. Both cloths are now quickly wrapped around it and firmly closed at the feet and around the neck. The child is thereby enclosed in an atmosphere surcharged with oil of mustard without having to breathe it. The pack is left for 10–15 or even 20 minutes, according to the reaction and the strength of the child. Soon the child will become restless and show signs of irritation. The effect of the stimulus to the skin will show itself in the red colour of the whole body on taking the child out of the pack. It is now put into a warm bath and carefully washed, after which it is placed into an ordinary warm water pack for 1–1½–2 hours, to prolong the hyperæmia of the skin as long as possible. Should the child turn very red in the face or perspire freely, it is to be taken out of this pack, washed in a warm bath, dried, and put to bed. The procedures are somewhat cumbersome, but more efficacious than anything else and always applicable. Generally the day after the respiration rate will have come down by about 30 in the minute, the respiration will be easier, and the general condition much better. More frequently, though, it will be necessary to repeat the process on the second or perhaps the third day. It should never be used more frequently than once in every twenty-four hours. Occasionally even this method of treatment will fail. D. O'C. Finigan.

Emetics in infant therapy ('*Archives Gen. Med.*,' *May* 30, 1905).—**H. Grenet.**—In ordinary laryngitis emetics are only indicated when bronchitis is also present. In spasmodic laryngitis, especially laryngismus stridulus, an emetic is indicated when an access is present or threatened; ipecacuanha is most serviceable, sulphate of copper less so. In croup of robust infants, with threatened asphyxia, emetics are of use when intubation or tracheotomy is temporally impossible. In bronchitis of the large and medium-sized tubes, with moist râles, emetics are of use. Antimony as an expectorant is serviceable in pulmonary congestion. In capillary bronchitis and bronchopneumonia ipecacuanha, though often used, is counterindicated, except in children above three years old, whose susceptibility to emetics is known; it acts by clearing the stomach and increasing respiratory movements. Diarrhœa or depression counterindicate its use. In pneumonia an emetic is only desirable when there is gastric disturbance; antimony is useful, combined with sulphate of sodium to act on the bowels. Emetics are useful in the early stage of whooping-cough; later they are only called for when mucus accumulates in the bronchi; sulphate of copper, being an antispasmodic, is to be preferred. In tonsillitis vomiting caused by an emetic may rupture an abscess and save incision. The main utility of an emetic is to relieve an overloaded stomach, when there is no suspicion of ulceration being present. In severe chorea, when antipyrine and arsenic have failed, and the pulse is strong, tartar emetic is given for three days—first day, 0·02 cgs.; second day, 0·03 cgs.; third day, 0·04 cgs. After a rest of three to five days, treatment is continued—first day, 0·03 cgs.; second day, 0·04 cgs.; third day, 0·05 cgs. If the case is doing well treatment is stopped, if not it is recommenced after a rest of three to five days—first day, 0·04 cgs.; second day, 0·05 cgs.; third day, 0·06 cgs. For infants apomorphin, on account of its depressant action, is more dangerous than advantageous. T. P. Beddoes.

Serum treatment of diphtheria ('*Practitioner*,' *December and May*, 1905).—**J. D. Rolleston.**—Since the use of serum cases of paralysis are more often seen, as they occur in cases previously fatal at an early stage. Palatal palsy occurs towards the end of the third week, though it may be earlier in severe cases. Some degree of cardiac affection may be found several weeks after acute attacks, but fatal cases are most likely to occur within the first fortnight; the symptoms undergo remissions and exacerbations. The palsies resemble cerebral lesions of syphilitic origin in the irregularity of their development, the fluctuating character of their symptoms, and the liability to follow maltreated initial manifestations. Of cutaneous manifestations there occur (1) a special form of scarlatiniform rash localised on the extensor aspects of the elbows and knees; it is frequently seen in severe cases, but is not due to antitoxin; (2) rashes due to antipyrin given for headache and to salicylates given on account of sore throat. (3) An enema, especially when long retained, may sometimes produce a bright scarlet rash on the trunk and limbs, and it is often difficult, when the patient has had an enema within twenty-four hours, to determine whether the rash is due to the enema, to the serum, or to scarlet fever; as a rule, however, the character of an enema rash is very different from that of scarlatina, and consists of a coarse papular eruption which first appears on the buttocks and flexor aspects of the thighs, and thence becomes generalised, being often very marked upon the face, which is usually spared by scarlet fever. (4) "Blanket rash" seen before antitoxin is given. Of the rashes due to antitoxin the scarlatiniform may be localised or general. Urticaria is most common on the seventh to eighth day of injection. Circinate erythema is usually preceded by the urticarial rash, and is associated with secondary phenomena, pyrexia and more or less constitutional disturbance, pains in joints, etc., and an adenitis of submaxillary and cervical glands; this rash appears from the tenth to eighteenth day from injection, first on the knees and elbows or on the inner aspect of the thighs, and spreads to rest of the limbs and invades the face and trunk. A drachm of menthol to an ounce of white vaseline relieves the cutaneous irritation. T. P. Beddoes.

Otology, Laryngology and Rhinology.

The post-operative treatment of the removal of adenoids ('*Centralbl. für Kinderheilk.*,' *June*, 1905, *No.* VI).—**G. Krebs** recognises two indications, the promotion of undisturbed healing of the wound and the prevention of recurrences. To fulfil the former he is most emphatic in his advice to leave the wound to itself, and to abstain from employing insufflations, sprays, brushes, or collunaria. The latter are especially liable to excite inflammation of the middle ear. A gargle of a 2 per cent. solution of hydrogen peroxide is the only measure he advises during the first few days. This gargle-water, of course, never comes in contact with the wound, and is only used to remove or to prevent the bad odour from the mouth so often noticed after operations of this kind. This gargle is in value analogous to the careful sterilisation of the neighbourhood of a wound in the skin which itself is being left intact. In far the most numerous cases the wound will heal without any further complications. For the first few days the food is to be fluid and cold; after about four or five days the patients may return to their ordinary diet and need only to be cautioned against sharp and peppery foods and against crumbs. They must also avoid the inhalation of dust-particles, and are therefore best kept from school for five to eight days. Every now and again complications are observed. If a strong attack of coughing immediately follows the operation, it is first of all necessary to see whether a small piece of the growth, though severed from its base, still adheres to the back of the pharynx by a shred of mucous membrane. These remnants are apt to occur even with the best and most often used instruments, and it should therefore be a rule for the operator never to send a patient away without a careful inspection of the pharynx after all bleeding has stopped. Such remnants are best removed with a pair of cutting forceps. Should the cough still continue and no other cause, such as blood trickling down the back of the pharynx, be apparent, one has to deal with a simple reflex cough set up by the irritation of the wound. A few kind words or the admonition to suppress the cough will soon stop it. Post-operative hæmorrhage is a fortunately rare but always serious complication. Its incidence is in direct proportion to the quality of the instruments and the experience of the operator.

Lacerated wounds and pieces of the growth left behind favour its occurrence. As to what to do in such cases: It is necessary to see whether a piece of tissue only partly severed is the cause and if so to remove it. Apart from this, only simple measures are indicated. Absolute rest, with elevation of the head, loosening of all clothes round the neck, sucking of pieces of ice, and lastly, a measure which will be found of the utmost value in all cases of bleeding from the upper air passages, deep inspirations through the nose, followed by light expirations through the mouth. The deep and forced inspirations diminish the pressure in the superior vena cava and its tributaries in the neck (and therefore at the site of operation) very markedly, rendering it in some cases even negative. As a consequence the blood will also be held a little longer at its point of egress from the vessel, and will therefore be able to clot easier. Krebs has always found these measures quite sufficient. Should an especially obstinate case occur he warns against the use of Bellocq's sound, as by this pressure is applied to the posterior ends of the turbinates, and not at all to the bleeding surface. He advises the introduction of a small piece of wool or gauze soaked in vioform, or if nothing else at hand, perchloride of iron, by means of a pair of long pharyngeal forceps. After keeping up pressure for a short time in an up-backward direction the forceps should be cautiously opened and withdrawn so that the tampon may remain. A third complication is an occasional fever, for which Krebs often failed to find an adequate cause. Two or three days in bed will bring the temperature down to normal again. Occasionally it has been due to follicular tonsillitis or to erysipelas, but these complications have been very rare indeed. Occasionally the middle ear has been affected. Inflammations in the latter are most often caused by extension from the pharynx, and the removal of adenoids is in nearly every case followed by a cessation of the otitis, but sometimes the operation may lead to a renewal of the inflammatory process. These cases are generally found to be only light in character. On the second or third day Krebs has occasionally observed a painful stiffness of the neck, lasting for several days. It is apt to supervene in cases in which the growths have also sprung from the posterior wall of the naso-pharynx, and in which it has been necessary to scrape the region of the upper cervical vertebræ. It is caused, he submits, by the irritation of the periosteum of the atlas and axis. No treatment is necessary, and the required rest is assured by the painfulness of the movements. For the attainment of the second object, a prevention of recurrences, thorough removal of the growth is essential. Remnants may occasionally atrophy, but one cannot rely upon that; on the contrary, the adenoidal tissue often rehypertrophies as a direct result of the wound irritation. Krebs advises examination of the naso-pharyngeal cavity six to ten days after the operation by anterior rhinoscopy, and removal of any newly-formed tissue with the well-sterilised finger. As at this stage the tissue is very soft and spongy, the procedure is very easy and saves any future operations. In addition, he administers iodine and iron. The syrupus ferri iodidi he discards on account of its blackening the teeth; instead he orders sol. ferro-mangano-iodo-peptonata in drachm doses three times a day. A few remarks on the necessity of breaking the habit of mouth-breathing and of insuring free passage of air through the nose wind up this most detailed and lengthy article. D. O'C. Finigan.

Unusual case of foreign body in the larynx ('*Arch. Internat. de Laryngol.*,' *May–June*, 1905).—**Zia Noury**, of Constantinople, reports a case which is interesting as showing the difficulty of discovering small movable foreign bodies in the larynx, in this case some pieces of egg-shell. The patient, a girl, aged 6 years, had a sudden attack of laryngeal dyspnœa on taking the last spoonfuls of soup; after a few moments respiration began again and gradually became quiet, but the voice remained hoarse, and she felt a pricking pain on swallowing. As the breathing was quiet, the case was diagnosed as one of simple irritation from the heat of the soup; there was slight swelling of the epiglottis and aryteno-epiglottic folds, but no foreign body could be seen. After two days dyspnœa became urgent and tracheotomy was performed. Skiagraphy showed no trace of any foreign body, and the larynx was now examined under an anæsthetic; the mirror showed that the false cords were very red and hid the glottis and sub-glottic region; nothing could be discovered by the finger or a probe. As the tracheotomy tube could not be removed without causing dyspnœa, the author suspected a small movable body closely applied to the wall of the larynx, and decided to perform thyrotomy; on opening the larynx three small pieces of egg-shell, measuring about $\frac{1}{5}$ inch across, came away on a sponge; a small subglottic granuloma was also found and removed. The case then progressed uneventfully. HAROLD BARWELL.

Surgery.

Pes valgus due to morphea (*'The Post Graduate,' New York, June*, 1905).—**H. L. Taylor,** of New York. A little girl, aged 9 years, had been getting lame for six months. There was marked difference in the size of the legs, the left being smaller, but there was no pain or paralysis. There was a shiny and thickened band of skin running up the outer side of the dorsum of the foot, passing below and behind the external malleolus and up the back of the leg to the hip-joint. In a general way, following the course of the great sciatic nerve and its external branch, were patches of dry thick skin spotted with white. This scar-tissue had stiffened the ankle and produced a valgus deformity. The lesion improved markedly under thyroid treatment.
J. PORTER PARKINSON.

Suffocative goître in children (*'Lyon Médical,' January* 15, 1905).—**Bérard** reports two cases of compression of the trachea by goîtres in children—the first in a boy, aged 14 years, a cretin, and the second in a girl, aged 13 years. In both cases iodides produced no effect. In both denudation of the gland, after Jaboulay's method, was performed, with good results. HAROLD BARWELL.

Acute arthritis of infants (*'Thèse de Paris,'* 1905; *'Gazette des Hôpitaux,' No.* 46, *April* 20, 1905).—**Hutan.**—Acute attacks of arthritis in infants are most often the result of blenorrhagia and nearly always involve several joints, whether due to vulvitis or purulent ophthalmia. They often go on to suppuration and in some cases are complicated by the grave results of general infection. They are nearly always caused by the gonococcus alone or associated with other germs. In the other affections of the joints one class is attributed to puerperal fever—the pneumococcus, erysipelas and osteomyelitis; the other class to acute articular rheumatism or certain general infections—scarlatina, variola, etc. Of the second variety of arthritis, the first alone is possible, even probable, but its existence so far has not been definitely demonstrated. E. J. COWEN.

Review of Book.

REPORTS OF THE SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN. Edited by GEORGE CARPENTER, M.D. Publishers: Messrs. J. & A. Churchill, 1904. Vol. iv; pp. 378, 2 Plates, 21 Illustrations.

IN the fourth volume of its Reports the Society for the Study of Disease in Children fully maintains the high standard of excellence for which it has obtained such a world-wide and deserved reputation. A careful study of its proceedings will amply repay every medical practitioner, and will give him most valuable information on numerous affections in children which are not described in text-books, as well as illustrations of marked and rare diseases. The popularity of this young Society is clearly demonstrated by the rapid increase in the number of its members and the extremely valuable work it is doing is shown by its records. One of the most important papers is that on "Delayed Chloroform Poisoning," by H. T. Stiles and Stuart McDonald, a condition recognised in Germany and described by Guthrie in this country. Two beautifully coloured plates show the pathological findings. Notable papers, also, are those by Cautley and Dent, on "Congenital Hypertrophic Stenosis of the Pylorus," an affection almost unrecognised a few years ago. The dissemination of knowledge of this disease has led to its frequent recognition and treatment by operation. A similar observation applies to an excellent paper, on "Congenital Word-Blindness," by Sydney Stephenson. There is no doubt that this, too, is an affection which will be more frequently recognised in the future, and that it has not been recorded more often in the past because it has been overlooked. Useful papers by A. Carless, on "Lymphangioma," J. H. Evans, on "Extra- and Intra-Cranial Hæmorrhages in the Newborn," and by J. P. L. Mummery, on "The treatment of Hernia in Young Children," must also be mentioned. A full report of the Wightman lecture, delivered by R. Clement Lucas, on "Hereditary Bias and Early Environment in their Relation to the Diseases and Defects of Children," is inserted.

Clinical records of a large number of cases are given, and with them, not the least valuable part, are reports of the discussions on the various points arising in connection therewith. It is noteworthy that these discussions are often of distinct value in elucidating the diagnosis, and that they maintain a high standard of excellence.

The editor has carried out his work with great judgment and skill, and the volume is a worthy addition to those which have preceded it. There is no doubt that in the reports of this Society there will be found many most valuable additions to our knowledge of the diseases of children, and that they should be in the hands of every general practitioner.

ERRATA.

"The Feeding of Atrophic Nurslings," by Professor G. Variot, July, 1905. On pages 300–01 "hypertrophy" should be hypotrophy, and "hypertrophic" hypotrophic.

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Original Articles.

SUBSTANCE OF A CLINICAL LECTURE ON SOME CASES OF DIARRHŒA AND VOMITING.*

By Charles J. Macalister, M.D., M.R.C.P.,
Physician Royal Southern Hospital and County Hospital for Children, etc.

At this time of the year a great many cases of gastro-intestinal catarrh present themselves in our Out-Patient Department, and I propose in this lecture to refer to one or two instances which show how necessary it is to attend to detail in the matter of physical examination and of clinical history if accuracy of diagnosis is to be assured. We all do our best when a troublesome case comes before us to elucidate its cause, but sometimes a vital point escapes observation which interferes with immediate success in treatment. This is particularly apt to happen when a number of cases having a symptom in common are being seen and perhaps dealt with in a routine way, as, for instance, at the present time, when diarrhœa is prevalent.

We had an example of this in the case of a little girl who was brought some time ago suffering from a diarrhœa which had been going on for some weeks, and the mother informed us that latterly the motions had contained blood and slime. Many remedies had been tried, some of them with temporary benefit, but nothing either in the way of diet or of medicine had stopped the trouble. The child did not look as ill as a case of chronic diarrhœa usually does, and from the history it was manifest that there was no abdominal pain; she simply complained of a constant desire to go to stool, and there was a good deal of straining and tenesmus. The abdomen was soft and natural, free from tenderness, and no swellings could be felt in it. The symptoms were out of all proportion to the amount of general disturbance, and this fact, together with a desire to exclude the possibility of there being an intussusception, led me to put my finger into the rectum, when the cause of the trouble was at once discovered in a foreign body which was lodged a little way above the internal sphincter. It proved to be an ear-ring, the hook of which had anchored it to the mucous membrane so that it could not escape, and it had set up much irritation. The mother had lost the ear-ring six weeks previously, but she had never dreamed of associating its disappearance with the child's illness. It is rather wonderful that the anchorage did not take place at some less accessible point and that the thing managed to travel down so near to the termination of the bowel. Speedy recovery followed its removal. I may say that the child confessed that she had swallowed the ear-ring, and there is no reason for doubting her story.

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* Delivered at the Royal Southern Hospital, Liverpool.

Another somewhat rare variety of diarrhœa in children is that which depends upon fæcal retention, and no doubt you will remember a boy, aged 10 years, who was brought as an out-patient early in this year suffering from this condition. He was a pale, pasty-faced lad, with dilated pupils, very neurotic, and was terrified at the idea of being examined by a doctor. He was subject to night terrors, and had had some epileptiform attacks which were probably hysterical in character. His illness arose from a severe fright which he got last winter, when some of his school friends pretended to strangle him; and they appear to have been rather realistic in their play, for they nearly succeeded, and the boy became so nervous afterwards that he would not go out at night alone, nor into his bedroom, nor any darkened apartment. The bowels had been quite regular until this accident happened, but afterwards, no doubt in consequence of the condition of mental apathy into which he had drifted, he became careless concerning them, and allowed many days to pass without having them moved. A considerable period of chronic constipation was followed by the onset of chronic diarrhœa, and it was for this that he was brought to us. His abdomen was very distended, and there was dulness on percussion in the left flank, and rectal examination confirmed the view that the bowel was loaded. He was treated in a way that I shall presently describe, and by dint of firm moral as well as medicinal treatment he ultimately improved in every respect, and we have heard nothing of him for many weeks.

I saw a very characteristic case of this nature some years ago in a little boy, aged 7 years, who was suffering from spinal caries, and he had incontinence of fæces so badly that it was impossible to keep him and his surroundings clean. He was a miserable little object, weighed 29 lb., could not stand although there was no paralysis, and his appetite was poor. The diarrhœa from which he suffered was supposed to be draining him greatly, and it was hinted that it was due to tubercular disease owing to the tumescent condition of the abdomen. There was a distinct swelling palpable to the left of the umbilicus, which extended from the costal margin above, and was lost in the pelvis below. It appeared to be about the size of a large orange. The question arose whether it could be tubercular in nature. To begin with, the situation was unusual for such a growth, and in palpating its consistence one could feel that although hard it could be impressed in places with the finger; examination *per rectum* quickly confirmed the diagnosis, for a large fæcal mass could be felt, and it was at once manifest that the diarrhœa represented a fæcal overflow or the escape of softened matter through a fæcal channel. One has had much experience of fæcal accumulations in elderly women at the Home for Incurables, and a method of treatment which is efficacious in them is doubly useful in the case of children, as was exemplified in the case now under consideration. A catheter was passed as high up as possible beyond the mass, and through this a dram of purified ox-gall was injected in order to soften the fæces; this having been retained for an hour, a simple enema was given which emptied the lower part of the bowel and, the diarrhœa stopping, the nurse thought the trouble was ended. Two days passed without any action of the bowels taking place, when I was again asked to see him, and I found the mass hardly diminished in size; so the treatment was repeated, the simple enema being replaced by one containing half an ounce of the sulphate of magnesia in 10 oz. of water and slowly injected, so that it would not be immediately expelled. In order to estimate the size of the mass, I requested the nurse to weigh a bed-pan carefully before being used, and the result was that in a short time the accumulation, weighing altogether (without the fluids), 7 lb., came away. The subsequent administration of the extract of physostigmia with aloes soon restored the function of the bowel, and it was not long before a substantial increase in weight with such restoration of strength as to enable him to be up and to walk a little, took place. An interesting point about this case was, that immediately the condition of the bowel was partially relieved after the first injection he began to have incontinence of urine, and it was found that the bladder was over-full, a constant dribbling of urine resulting. This was due to some pressure cause, because when the thorough evacuation was effected the condition ceased.

Physostigmia is a very useful drug, either given alone or in combination with purgatives when constipation depends upon deficient tone in the intestinal muscles. This, of course, applies to adults as well as to children, and when the bowel has been stretched and paralysed by over-distension, as in the cases quoted above, it is certainly of value. I very frequently make use of it in cases which present the following characteristics: A well-grown girl, aged 14 years, somewhat stout, and not very robust in her habit, was brought to me suffering from obstinate constipation which had been found very difficult to treat because even small doses of laxatives, such as cascara, while acting on the bowels, promoted an irritating diarrhœa. The child was afraid to take any aperient medicines on this account, and yet could not do without them because the bowels remained inactive, and consequently she lived in a condition constantly alternating between constipation and diarrhœa. The constipation seemed mainly to result from muscular atony, so instead of giving any laxatives or purgatives I ordered $\frac{1}{4}$ gr. of the extract of physostigmia three times a day, with a result that was completely and permanently satisfactory. Recently a lady consulted me who gave a very similar history, her expression being that it was far preferable and more comfortable to endure days of constipation than the nagging diarrhœa, sometimes lasting for several days, which invariably followed any aperient medicine. Physostigmia soon put this to rights, and I esteem it a valuable remedy, given alone in such cases and in combination with aloes and rhubarb when aperients proper are indicated.

There is yet another form of diarrhœa which is worthy of mention while dwelling on this subject, in which it is of great importance to arrive at an accurate diagnosis. I mention it because in the case which I shall recite (the notes of which were kindly furnished by Dr. Theodore Armour) the boy got very undeservedly a reputation for "dirty habits." He used occasionally to soil his clothes or the bedding, owing to the fact that the diarrhœa came on with great intensity and with hardly any warning. He was 8 years of age, and came of a tubercular stock. His digestion had always required great attention even as an infant, and for five or six years he had been subject to these sudden attacks of diarrhœa, the stools being very copious, watery, and containing much mucus. The attacks occurred sometimes every day and sometimes at longer intervals, and, as a rule, there was only one such evacuation on any given day. An interesting point about the case was the circumstance that occasionally the diarrhœa had been replaced by symptoms of quite a different character; there had been obstinate constipation, perhaps, for nearly a week, associated with headache, and languor, and vomiting so intractable that nothing would stay down. The boy lay with his face turned away from the light, dull and heavy in his mind, and slow to answer questions; the abdomen scaphoid, but everywhere soft; the tongue quite clean, with a slimy secretion upon it; no rise of temperature; pulse 80. This was manifestly a toxic condition, and it appeared as though the cessation of the diarrhœa led to the more severe absorption symptoms. This prolonged diarrhœa gave rise to much wasting, and the boy was weak, his skin dry and harsh, and his appetite capricious. Eustace Smith many years ago wrote an excellent account of a condition which he styled "mucous disease," where an excessive secretion of mucus throughout the whole alimentary canal is associated with attacks of mucous diarrhœa, sometimes alternating with constipation, restlessness at night, wasting, sallow complexion, rough, harsh skin, and occasionally bilious attacks, which were followed by some relief of symptoms, and the case which I have recited was one which might be placed in this category. The chronicity of the diarrhœa and the wasting in these cases have not infrequently led to the suspicion that the children were suffering from tuberculosis; but the absence of fever and of any local evidences of that disease, together with the mucous catarrh which is invariably present, serve to differentiate the disorder, and, having been diagnosed correctly, the treatment becomes a fairly easy matter, excepting that recurrences will often take place over a period of years. It is best, in my experiences, to begin by clearing out the intestines with a dose of calomel, and afterwards to give an antifermentative dietary, and remedies such as the sulpho-carbonate of soda with myrrh, and small doses of aloes, which, as Eustace Smith pointed out, is practically a specific in this disease. The ordinary astringents are not useful, but the liquor ferri pernitratis, in doses of 5 minims taken in water after food, is sometimes serviceable. For the wasting nothing hastens nutrition or aids the return of the skin to its normal state more efficiently than inunctions of lard or of boiled bacon fat, and it is astonishing how rapidly weight is put on when this is done.

I wish just to say one word about the condition known as lienteric diarrhœa before passing on to another matter because it is a disease which, while presenting very distinctive features, often proves troublesome if the prominent symptom is treated with ordinary astringents. The immediate recognition of the disorder leads to its speedy relief; but if the diagnosis is missed the looseness of the bowels will baffle treatment and the little patient will waste, lose colour, and his general health will fail. When these cases are brought to us they have often been suffering for some weeks because the diarrhœa is not so marked as to cause the parents to seek early relief, and it frequently happens that they have been trying to overcome the trouble with domestic remedies. You have seen these cases in the out-patient room, and the mothers have told us that everything "runs through" the child. This is literally true because when we examine the stools we find them to consist largely of undigested food with mucus which has been raced through the alimentary canal so speedily that neither digestion nor assimilation has been possible and there is little wonder that the child wastes under these circumstances. Inquiry elicits the fact that an evacuation frequently occurs the first thing in the morning, but it is characteristic that they take place soon after each meal and that sometimes the child has to speedily leave the table during a meal to have its bowels moved. This urgent call, which is sometimes accompanied by colicy pains, means a very active intestinal peristalsis, and consequently we must administer remedies which will regulate the peristalsis. It is an atonic condition and is very apt to occur in nervous, highly strung children. The treatment is simple; a minute dose of opium given three times a day, together with a minim or two of the tincture of nux vomica immediately before meals, will, in the majority of cases, speedily check the condition. The opium is only useful to stay the immediate muscular irritability of the alimentary canal, and it should not be continued for many days, the nux vomica being all that is necessary in the way of medicine to restore the tone. In many cases arsenic is useful and, given in small doses, will often serve to promptly relieve the disorder. The diet should be simple and unfermentable and free from all irritating elements and the general treatment should include warm baths and the cutaneous inunctions to which I have already referred if much loss of flesh has been entailed. The health is usually quickly restored.

In conclusion, I have very little to say about another common symptom which requires care in reference to its etiology; I refer to chronic vomiting, which may be a very simple matter or may be of the gravest significance. Many years ago a child, aged about 4 years, was brought to the Out-Patient Department apparently in the last stage of starvation; it was wasted to a skeleton, and its mother informed us that it vomited everything, not even a teaspoonful of water being retained. This had been going on and had been progressively getting worse over a period of several weeks and it transpired that it had originated in an accident, a small quantity of a solution of caustic of soda having been swallowed some time previously. The child had no doubt been removed from the hospital in which it had been treated after recovery from the immediate effects of the inflammatory condition which must have existed, and the stricture of the œsophagus which accounted for the vomiting and the retching had subsequently developed. It was too late to do anything, for death occurred almost immediately and a post mortem revealed a contraction with a tortuous, almost impenetrable, channel occupying the middle and lower thirds of the tube. I am speaking from memory concerning this case, but it impressed upon my mind the fact that constant vomiting may mean œsophageal stricture.

A condition always to be looked for when a case of chronic vomiting with wasting which has progressed since birth is brought to our notice is the congenital hypertrophic stenosis of the pylorus concerning the diagnosis and successful treatment of which so much has been done by Dr. Edmund Cautley and Mr. C. T. Dent. Many of these cases must have been regarded in the past as instances of simple infantile atrophy, and I have no doubt that even now not a few of them are overlooked. Every case of atrophy with chronic vomiting in a young infant should be carefully investigated with reference to the possibility of its being due to this cause, for it will only waste time to try and mend matters by feeding or by medicinal measures if narrowing of the pylorus exists. Dr. Cautley gives an excellent account of this disease in the first number of the BRITISH JOURNAL OF CHILDREN'S DISEASES, 1904, and I would recommend you all to read it; for in your practice cases of infantile vomiting and wasting will often be brought to you, and to recognise a case of pyloric stenosis early will result in the possibility of saving the child's life.

Some cases of chronic vomiting, especially in older children, are probably due to serious changes in the mucous membrane, which possibly result from neglected catarrhal conditions, but I am disposed to think that toxic influences have much to do with some of them. Many of them remind us of chronic uræmic states, and one suspects that toxins retained in the blood through some fault in the eliminative processes, perhaps due to the inability of the poisons to stimulate the organs of elimination and so promote their own removal, may account for the chronicity and ultimately fatal issue of the process. Sometimes these cases date back to a septic or infective disease, such as measles, and perhaps at other times the poison originates in something ingested. Dr. H. T. Nixon, of Liverpool, had a case last year which well serves to exemplify this type. He was asked to see a boy, aged 2 years, on September the 22nd, 1904, on account of persistent vomiting, which had not improved under previous treatment. The child had been well nursed on the breast, and had walked when 12 months old. Two months before being seen it had developed measles and had not been well since, vomiting every day and wasting progressively. When seen it was pinched, pale, very wasted, and vomiting everything; temperature sub-normal; the bowels constipated. The lungs and other organs seemed healthy, and there were no evidences of renal or of cerebral disease. He was ordered to have white wine, whey, and small doses of calomel, and a carminative mixture was also prescribed and he ceased vomiting, with the exception of one day slightly, until October the 8th, when it returned, and peptonised milk was substituted for the whey. This agreed fairly well until October the 13th, when there was another outburst of vomiting, and an alkaline solution containing minute doses of arsenic was given with a carminative; again the trouble ceased until October the 17th, and, after that, with slight general improvement, there were intervals of immunity, during which more nourishment was taken, but eventually, after periods of advance and relapse but with no improvement in nutrition, he collapsed suddenly on December the 2nd and died.

If these cases are carefully watched it will be observed that the disease presents periods of exacerbation, followed by remissions, which suggest the possibility that the poisons which cause the toxic symptoms are cumulative and perhaps partly eliminated at the time of the exacerbation. This has been distinctly noticed in some other toxic conditions, as, for example, in those mysterious cirrhoses of the liver* which are inaugurated by an acute attack of vomiting and other evidences of grave toxæmia. The poison never gets completely away, and is reproduced over and over again until, by organic changes and exhaustion, death is brought about. The treatment of these cases will depend upon the possibility of rendering the poisons inert or of adding to the blood some substances which may act as vehicles for their removal.

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* *Vide* "Two Cases of Cirrhosis of the Liver in Children—with Observations," 'Reports of the Society for the Study of Disease in Children,' 1904.

SPECIAL TRAINING CONSIDERED FROM THE PHYSIOLOGICAL STANDPOINT.*

By A. F. Tredgold,

Physician to the Littleton Home for Defective Children, etc.

Special training has a double object. *Firstly*, it should develop and cultivate all the latent potentialities of body and mind to their fullest extent; *secondly*, it should supply such particular instruction as will fit the individual for some useful work in after life. In other words, it should aim at inculcating wisdom as well as imparting knowledge. The former of these objects is educational in the literal sense of the word, the latter may be looked upon as technical. It is with the educational part of special training, and with that portion of it which has to do with the development of mental capacity, that I here propose to deal.

The mind of the *healthy* child has an inherent power of development which makes it, to a certain extent, independent of its environment, or perhaps I should rather say that it is capable of utilising and responding to any surroundings, within ordinary limits, in which it may be placed. On the other hand, the *feeble* mind is lacking in this power, and its development has to be aided and encouraged by special means. Hence the task of the special teacher is much more delicate and difficult than is that of the one who is concerned with ordinary children. Before he can cultivate the mental faculty of the defective child with any degree of success it is necessary that he should be familiar with its characteristics, as well as with the conditions governing normal mental action; in short, he must have a knowledge of the material he is called upon to mould as well as of the tools to be used in the process. In my opinion, the subject of elementary psychology should form part of the curriculum required of every special teacher.

It will be understood, of course, that in an address like this I can only deal with the subject in the briefest possible way; I shall therefore limit myself to putting before you a few general physiological principles which are of importance in special training.

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* An address delivered before the National Special Schools Union at Richmond, July the 1st, 1905.

It is first of all necessary to say a few words as to *mind* itself. For purposes of education the teacher must put aside all metaphysical theories as to its nature and simply regard mind as synonymous with brain. From his point of view the cultivation of mental faculty consists solely and simply in the development of cerebral action. If he can succeed in correcting any faulty, or improving any defective, physiological function of the brain, he may be perfectly certain that he is thereby adding not a little to the mental capacity of his pupil. Now the source of all cerebral action is the nerve-cell, and within the brain there are millions of these cells connected by a complicated system of nerve-fibres; as a result of this arrangement the brain is a seething mass of nervous currents passing in many, but in perfectly definite, directions. There are also nerve-currents passing inwards to the brain from the organs of special sense, and others passing outwards from the brain to the muscles. It is to the sum total of all this nervous activity that we give the name *mind.* But, although mind is thus the *resultant* of all these currents, it will be convenient for our present purpose to consider them separately; accordingly I shall divide what I have to say into three sections, and shall speak of (*firstly*) incoming currents, (*secondly*) internal currents, and (*thirdly*) outgoing currents.

Incoming Nerve-Currents.

The brain of the newly-born child consists of a gelatinoid substance in which are embedded myriads of embryonic nerve-cells; these cells, however, are so immature that the child may be said to be mindless. Mental development proceeds by slow and orderly steps, and one of the most important means by which it is brought about is the stimulation of these cells by impressions coming through the senses. I particularly wish to emphasise the importance of these incoming sensations. Should only *one* sense be diseased or defective, a corresponding area of the brain will remain permanently undeveloped, and should it happen that communication with the outer world is closed along several sensory channels, the growth of the brain may be so much interfered with as to produce a condition almost amounting to idiocy. As instances of this I may refer you to the celebrated cases of Kaspar Hauser and Laura Bridgman, with the details of which you are probably familiar. Considered therefore merely from the point of view of their stimulating effect upon the brain-cells, sensory impressions are as necessary to cerebral development as are the rays of the sun to the growth and maturation of plant life, if indeed they are not more so.

This, however, is by no means their only effect. The most necessary and the most important mental function is, as we all know, the power of reasoning. The feeble-mind will be rendered useful to himself and to society just in proportion as we can develop his common sense. Now, reasoning is dependent upon the ability to form ideas; it is, in fact, nothing more than the comparison of a series of ideas. Ideas are simply memory pictures, or *images*, as they are called, resulting from previous sensations. Hence sensations are the basis of all mental life.

The production of mental images, either in the presence or absence of an external object, is a process in which *internal* brain currents are largely concerned; at the bottom, however, the capacity is determined by the power of the brain to receive and discriminate between impressions from without. All that the internal machinery does is to bring about combinations and rearrangements of these impressions; it adds nothing new, and we may go so far as to say that in the absence of external sensations the brain-cells are probably incapable of producing a single idea. Sensations are the bricks out of which the mind is built. A parallel which may help to explain my meaning exists in that pretty little scientific toy the kaleidoscope.

From this it follows that the cultivation of the capacity of the feeble-mind for receiving and distinguishing between sensory impressions,—the development of the range and delicacy of his sensorium,—is a matter of the utmost importance to the special teacher; indeed, I would go so far as to say that the cultivation of the impressionability of the brain must form the very foundation of special training.

Now, of course, we live in a perfect sea of sights, sounds, and vibrations of every kind, and, as I have already remarked, the healthy brain is so constituted that it can turn these to account without any special tutorial help. I do not say that this is likely to lead to the best results, because I believe that the mental capacity of even the healthy child would be greatly improved by a course of sensory training on physiological lines. I doubt whether the actual mental development of anyone, even the best, comes up to the inherent potentialities. With regard to the defective mind, however, such a course of training is in my opinion an absolute necessity. To a certain extent this is recognised by those responsible for the curriculum of special schools, and there is no doubt that kindergarten occupations, object-lessons, and the general methods of teaching are not only physiological but have a distinct and great educational value which I should be the very last to depreciate. I cannot but think, however, that even more success would be obtained if a little more time and attention were devoted to the regular and systematic stimulation of the sensorium on these principles.

The chief senses through which impressions reach the brain are six in number, namely, eye, ear, nose, mouth, skin, and muscle. The first and last are of most importance, and the only ones I can here refer to.

By means of *sight* we receive information regarding the colour, size, and form of objects, and attention should be given to each of these. It will often be found that whilst the defective child recognises the primary colours readily enough, he has little power of discriminating between their shades, and that whilst he distinguishes between the forms of a triangle, a square, and a circle, he fails to see any difference between triangular or quadrangular figures of different shapes.

In teaching him *colour* discrimination I think the most convenient apparatus is a series of 40 to 50 tablets, one inch square, each painted a different shade. Thus we have about eight shades each of blue, red, green, yellow, orange and purple. Assuming that he has learned to recognise each of these colours, we place before him the two extremes—the lightest and darkest—of any one colour. Having got him to appreciate these, the darkest is replaced by the next darkest, and so on until he can distinguish between any two adjacent shades of each of the colours.

For training his appreciation of *form* a similar method is made use of, but the apparatus consists of a series of tablets of an uniform colour, but of slightly differing shapes. He is first of all required to sort them all out into heaps of different shapes. These heaps will probably be three or four in number, and consist of round and elliptical, triangular, quadrangular, and multi-angular figures respectively. The teacher then takes each heap in turn and shows him that it really embraces tablets of many different forms, taking care to begin with the two extremes just as he did with the shades of colour.

Perception of *size* is taught in a similar way, the tablets being in this case uniform in shape and colour, and different only in size. Strictly speaking, these two last exercises are not purely visual, since muscle sensation is involved; it is, however, convenient to consider them along with vision.

The cultivation of the *muscle sense* is particularly called for in the case of feeble-minded children, since, in addition to its general educational value, it is a faculty which is absolutely essential to the proper performance of manual occupations, and the future of the defective child must depend to a very great extent upon how he can use his hands.

Sensations travel to the brain from the muscles just the same as from eye, ear, mouth, etc., and they may, with a little practice, be appreciated and compared with one another in precisely the same way. These sensations arise in two ways—*firstly,* when a muscle or series of muscles is moved; *secondly,* during the tension of a muscle. Generally speaking, sensations arising during muscular contraction are of use in appreciating size and distance, whilst those arising from muscular tension tell us of weight. Of course in the actions of ordinary life we make use of several senses simultaneously, and those from muscle are aided by others from skin and eye. In training, however, it is better to take each sense independently, and during these exercises the pupil's eyes must be kept closed.

For cultivating the child's appreciation of *weight* the best apparatus is a series of small chip boxes of uniform size, each loaded with a varying number of small shot. Each box differs from the next in the series by a few shot only, and they are placed in turn upon the pupil's outstretched palm for him to tell which is the heavier. In this exercise the teacher begins the comparison with the extremes and gradually proceeds to those more and more alike, just as he did with the shades of colour.

For the estimation of *size, form,* and *distance* the variously shaped tablets which were used for vision may be employed, the pupil being required to differentiate between them by passing his fingers round the edge of each tablet. Another most admirable method is that used by Miss Mumbray, Headmistress of the Goodrich Road Special School. This consists in directing the children to measure off on a sheet of paper any prescribed distance, say from a quarter to four or six inches. After a little practice at this they are required to again draw lines of specified length *without* the measure. The results achieved are really astonishing and show well what may be done in the cultivation of these children's muscle sense, as also the practical value arising therefrom, especially when they proceed to more definite technical handiwork such as Sloyd.

There are, of course, many other exercises which may be used to develop the sensorium of the feeble-brain, but to which we cannot here refer. I trust that those I have described will sufficiently show the principles upon which they should all be based. We must now briefly consider the

Internal Nerve-Currents.

These are of the utmost complexity, but the only ones I shall notice are those concerned in attention, association, and memory.

Attention.—The feeble-minded child is generally deficient in the power of attention. He is either utterly lethargic, appearing to have no interest in anything, or else he is unduly restless and liable to be distracted from his task by every passing event. There is no doubt that much may be done to remedy this state of affairs by the discipline, regular habits, and spirit of emulation incident to class work. It is important for the teacher to remember, however, that attention which is constrained always means much nervous expenditure, with consequent fatigue, and he should always endeavour to gain his pupil's attention with the expenditure of as little mental effort as possible. The things to which we attend the easiest are those in which we are interested, and the psychological principles for developing attention may be expressed in the following three maxims:

(1) The pupil's occupations must at first be those in which he is naturally interested.

(2) His interest must be enlarged by the introduction of new occupations closely allied to those in which he is naturally interested.

(3) An artificial or derived interest must be created for those subjects which are not attractive in themselves, or as Ribot says, they must be "rendered attractive by artifice."

The process of *association* is of paramount importance in mental action. By its means all the varying impressions received through the senses are again connected so as to produce a complex picture and a sequence of ideas. Defective power of association means not only crudeness of the individual mental images, but paucity of images and ideas generally. The defect of this function in the feeble-mind will be readily demonstrated by getting him to describe some simple object like a cow or a house from memory. In training association we proceed upon an exactly opposite system to that in training discrimination: there we presented sensations singly, here we present them simultaneously, the law of association being to the effect that those impressions which are simultaneously received by the brain tend to be permanently connected. The subsequent repetition of a single sensation then recalls all those with which it has been associated.

For example, let the child feel, handle, weigh, notice the colour, and learn the name of a shilling. The subsequent auditory sensation "shilling" will call up a mental picture of its attributes. Object-lessons also are of great value in training association.

Memory is often spoken of as if it were a distinct "faculty" of the mind. It is nothing more nor less than the outcome of association, and in proportion as we develop the child's power of association so we cultivate his memory. These internal nervous processes to which we have briefly alluded, as well as many others, such as imagination, judgment, reasoning, etc., are of such great interest and importance to the special teacher that I should have liked to discuss them at much greater length. Unfortunately this is impossible in the present place and we must now pass to

Out-going Nervous Currents,

in other words, to movements. All mental action finds its expression in movement of some kind or other. It may be the mere opposition of the thumb and forefinger, the play of facial expression, the complicated mechanism of speech, or the deliberate conformation of the whole being to some emotion or ideal, as seen in conduct and behaviour. But whatever may be the nature of the movement, this subject has an importance for the teacher which is really greater than any of the other functions of mind; for it is by the character of his movements and actions and general behaviour that the entire relations of the defective child to the rest of society must be determined. We may, indeed, say that all means for the development of mental faculty are of importance only in that they cultivate, co-ordinate, regulate, and control mental manifestations—*i. e.* movements. Now, every movement is the result of an explosion within nerve-cells; this originates a current which is transmitted along nerve-fibres to a series of muscles and thus gives rise to movement. The reason explosions occur is because the nerve-cells consist of a highly unstable and explosive material, and in the early months of life this instability is so great that spontaneous explosions are constantly taking place. These produce the incessant small movements which are so characteristic of healthy childhood.

As development proceeds connections are formed within the brain between the cells receiving impressions from without and the motor nerve-cells. The result of this is that the explosions and consequent movements tend to be less independent and in their force and range to be proportionate to the incoming sensation—in other words, co-ordination is developed.

The advantage of this is obvious, for the irregular haphazard spontaneous movements only use up nervous energy without serving any purpose, whilst the adaptation of the movement to the sensory impression which calls it forth insures the maximum result with the minimum expenditure. The object of training therefore is to convert spontaneous activity into co-ordinated and controlled movement.

Moreover this applies just as much to the general actions of life as it does to ordinary manipulations. The best life, on the whole, is the one in which behaviour and conduct are carefully regulated by and adapted to the environment—in which the individual is in harmony with his surroundings.

At first sight there may seem to be but little connection between complex movements on this extensive scale and the flexion of a finger ; there is, however, every reason for thinking that in proportion as the smaller movements are brought under the control of the mind, so there is induced a regularity and orderliness of brain action generally which will affect the behaviour and relations of the entire being.

There is, unfortunately, no time to enter into the details of muscular training, about which indeed a whole book might be written. I may say, however, that in the main it resolves itself into the following : (1) *The development of movement* where this is deficient, as in the case of the torpid listless pupil who seems content to sit at his desk like a log. Treatment here must consist of energetic stimulation through the senses ; (2) the *co-ordination of movement*, which is ample in amount. It is here that the various forms of drill, gymnastic exercises, etc., are of the utmost service as a beginning, whilst later on eye drill, Swedish exercises, and the manual occupations of the kindergarten are specially called for ; (3) the *correction of abnormal movements* in the shape of tricks, habits, and various automatic actions with which we are all familiar. This is also accomplished by similar methods to those for improving co-ordination, whilst the imitation exercises as described by Dr. F. Warner are of particular value.

In conclusion let me say this : Mental defect cannot be cured. No method exists, or ever will, by which the feeble-minded may be converted into the normal child. Some defect must always remain, and considering that the conditions of life are such as to make more and more demands upon the intellectual faculties, it follows that individuals who are thus handicapped can never hope to compete with the normal population upon equal terms.

Nevertheless, I believe that there are potentialities in these children which it is dangerous to neglect, and which it is decidedly in the interest of society to develop. The desirability, indeed the necessity, for this has been recognised by an Act of Parliament, and the task has been entrusted to you as special teachers. It is my firm conviction that the future usefulness of these children will be dependent upon the extent to which their *general* mental faculty is developed, and I therefore think that no means by which this may be accomplished should be neglected. I consider that the best methods are those based upon physiological and psychological laws, that training of this kind should run concurrently with kindergarten work, and should precede any attempt to impart definite technical instruction.

ON SOME OF THE DISEASES AND INJURIES OF THE EYE PECULIAR TO CHILDREN.*

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(*Continued from page* 397.)

Keratomalacia.

That the cornea may become gangrenous in babies suffering from inanition is a fact that must have struck attentive observers since the earliest dawn of scientific medicine. The condition, indeed, appears to be tolerably common in several parts of the world, as, for example, in Russia, Brazil, Germany, and Japan. A similar condition is found, though rarely, in England, where it affects exclusively babies whose nutrition is at a dangerously low ebb. The disease was described in 1827 by Dr. Joseph Brown, of Sunderland, in a brief communication that bore the significant title of "A Case of Ulcerated Cornea, from Inanition" ('Edin. Journ. of Med. Science,' vol. iii, p. 218). Among the other British authors who have published instances of the disease are Mackenzie, Bowman, Spicer, J. T. Thompson, Ormond, and myself.

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* A lecture delivered on July the 11th, 1905, in the post-graduate course of ophthalmology in the University of Oxford.

Keratomalacia is essentially a disease of children whose ages range from 4 to 12 or 14 months. At the same time, cases are not unknown in newly-born babies, and there are good reasons for thinking that they have now and then been mistaken for ophthalmia neonatorum with destructive corneal lesions.

The disease in infants was attributed by von Graefe to encephalitis, a view adopted by Hirschberg also. The diffuse infantile encephalitis of Virchow, however, is nowadays regarded as non-existent, and so von Graefe's theory has fallen to the ground. It is significant that keratomalacia hardly ever occurs in breast-fed babies, unless, as in Russia, the mother's health has become impaired by long fasting, a thing scarcely likely to happen in this country. Here, without exception, its victims are marasmic, "little wasters" in the pitifully expressive jargon of a children's hospital. The marasmus may be either symptomatic or idiopathic. The causes of the former include tuberculosis, syphilis, and imperfect dieting, with its sequels in the shape of chronic diarrhœa and vomiting. Of seven fatal cases under my care, tuberculosis existed in four (57·14 per cent.), the diagnosis being made during life in two and after death in two of the children. In two of the cases (20·85 per cent.) infantile syphilis was recognised as present during life. In a single case only (10·42 per cent.) did marasmus—that is, a vice of nutrition only—appear to exist. The figures are small, but so far as they go they indicate that tuberculosis is the chief cause of keratomalacia, a conclusion that I had previously reached on other grounds. One must remember that in infancy there are many points of resemblance between marasmus, on the one hand, and tuberculosis, on the other. Progressive wasting, pallor, and loss of strength are features common to both affections. Many a case assumed to be one of marasmus has turned out upon the dissecting-room table to be one of generalised tuberculosis. A fatal termination is common in keratomalacia. In my present series of ten cases the mortality amounted to 70 per cent. Age has a good deal to do with the result, whether lethal or otherwise. The older the baby, in fact, the better are the chances of recovery.

As regards the cornea, the symptoms of keratomalacia may be summed up in the three words—infiltration, ulceration, and perforation. There is rarely any swelling, redness, or spasm of the eyelids, neither is the eyeball congested, nor, in short, are there any of the appearances that one would naturally expect to find associated with so severe and destructive an affection of the cornea. The eyes often look curiously dry, as it were, and are more or less insensitive to stimuli. A very characteristic feature of the cases is that the baby scarcely resents examination of the eyes, or at most moans feebly and piteously during the necessary manipulations. A common accompaniment of keratomalacia, first mentioned by von Graefe, is a small, triangular, greasy-looking, white patch, situated in the ocular conjunctiva on one or both sides of the cornea. Exceptionally, as in one of my own cases, this may be replaced by a narrow, slightly raised, glistening line, occupying the position of the limbus conjunctivæ. It is doubtless due, like the much commoner triangular area, to the lodgment and multiplication *in situ* of the saprophytic and ubiquitous xerosis bacillus. No specific micro-organism is found in keratomalacia. The ordinary pyococci are, in my experience, invariably present, and considering the bad nourishment of the patients, they are amply sufficient to account for the destructive corneal process. The disease is usually bilateral.

If the baby's nutrition cannot be bettered, the cornea is likely to perforate, a process usually preceded by localised protrusions of Descemet's membrane, which manifest themselves as so many dark-hued areas peeping through the greyish slough that covers the rest of the cornea. Perforation is followed by escape of some of the contents of the eyeball, and the globe eventually shrivels up into a small, white, globular, sightless mass, lying in the depths of the orbit. The more common event, however, is for the baby to die before there has been time for that change to take place.

Treatment.—The first requirement is to place the baby in hospital, where details of feeding can be attended to properly, and the child can be kept warm, if necessary in an incubator. The general treatment is that suitable for marasmus. The administration of alcohol, in the form of brandy, has seemed to me to be most helpful. Cod-liver oil has a distinct value in these cases, especially when used as an inunction. Neatsfoot oil is as valuable as cod-liver oil, and is certainly much more economical. If syphilis be present, recourse must be had to mercury. The local treatment of the eyes will include the frequent use of douches of warm boric lotion. The employment of physostigmine has been warmly recommended by Dr. J. Thalberg ('Archives of Ophthalmology,' 1883, p. 211), who has seen much of the disease in Russia. My own experience leads me to rank physostigmine very highly, and it is sometimes surprising to observe how quickly the cornea casts off its sloughs under the influence of that remedy. A solution containing one grain of physostigmine sulphate to the ounce of water should be dropped into the eyes every four to six hours according to the severity of the case.

During the more acute stages of disease the eyes should be kept tied up, and it goes almost without saying that the utmost gentleness should be exercised in making the necessary applications, examinations, and so forth.

BUPHTHALMOS.

There are several points about this rare and peculiar malady that are still somewhat of a mystery to ophthalmic surgeons.

Buphthalmos is either present at birth or, less commonly, develops at a very early age. It may affect one or both eyes. Its leading symptoms include: (1) increased intra-ocular tension; (2) progressive enlargement of the entire eyeball, revealed clinically by the greater dimensions and altered curvature of the cornea, whence the names "ox-eye" and "megalocornea" sometimes applied to the disease; (3) pathological cupping of the optic disc; (4) haziness of the cornea; and (5) defective sight and a degree of photophobia.

It is established that the primary departure from the normal in buphthalmos lies in the increased intra-ocular tension, and that the other symptoms, as enlargement of the eyeball and cupping of the optic disc, are dependent upon this feature. Hence, buphthalmos is nowadays usually regarded as a form of congenital or infantile glaucoma. In progressive cases the iris may become so stretched and attenuated as to be torn, thus producing, as it were, several artificial pupils, as happened in a case of my own.

There are comparatively few cases of buphthalmos where the cornea retains complete transparency. Indeed, the corneal lesions may now and then, as in the following case, form the prominent feature of the disease:

(7) Edith P—, seen when about 3 months of age, showed a slight degree of buphthalmos. The history was that the baby was born on June the 30th, 1900, and that she had always been remarkable for possessing "a fine pair of eyes." On awaking on the morning of September the 8th, 1900, the right eye was noticed to be cloudy, a condition diagnosed by the two medical men who were summoned as due to "keratitis." The eye was not red, but there was evidently some photophobia, since the baby, for the first time in her life, screwed up her eyes when taken out of doors. The cornea remained cloudy until September the 11th, when it began to clear, but a few days later (September the 17th) it again got dull. When I saw the baby a few days later, there was slight but definite enlargement of both eyes; the corneæ were somewhat milky; tension was *plus*. The baby "snuffled" slightly, and the bridge of the nose, as shown by the photograph, was slightly depressed. The child was, however, well nourished, although very bad tempered. The baby remained under my immediate observation for several weeks, during which time the corneæ alternately cleared and became cloudy, and I satisfied myself that the alterations in transparency were connected with a corresponding change in the intra-ocular tension and presumably with

an obstruction to the circulation of lymph. The patient was treated for about three and a half years with physostigmine locally and mercury with chalk internally, and on April the 9th, 1904, the following note was made: "Child distinguishes objects readily with either eye. Tension normal. Right cornea 12 mm. and left cornea 11 mm. The right eye looked larger than the left. There was a good fundus reflex, but the pupils were so much under the influence of the physostigmine that no satisfactory view of the fundus could be obtained." On March the 21st, 1905, the child was seen again, and a note made to the following effect: "A few small nebulæ mark the site of a recent phlyctenular efflorescence. The child is said to see well at a distance, but she looks close at coloured pictures. Transverse diameter of each cornea 12 mm. The right eye, however, looks larger than the left, owing to the cornea of the former being more globular than that of the latter. Anterior chamber deep, especially on the right side. Tension normal. Discs deeply but not universally cupped. A myopic crescent is present, especially in the right eye."

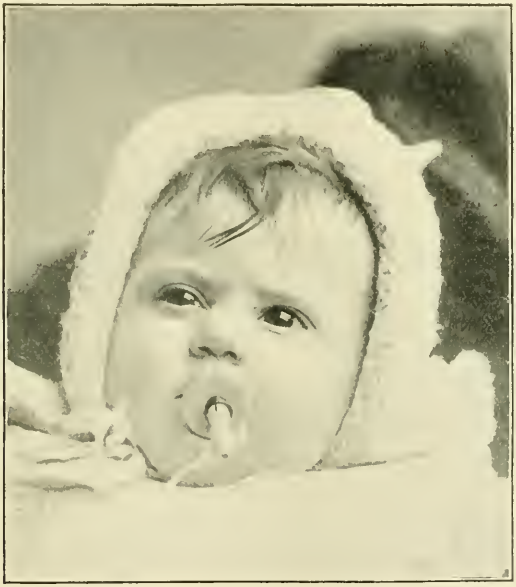

FIG. 1.—Mild buphthalmos.

Pathological examination of eyes with buphthalmos has shown as a constant lesion adhesions between the root of the iris and the periphery of the cornea. My own specimens, derived from three eyes, all go to prove that this is the outstanding pathological feature of the disease. According to one view, of which Mr. E. T. Collins (1), if not the actual originator, is, at all events, the chief exponent, these anterior peripheral synechiæ—for that is what they amount to—are caused by developmental defects. Mr. Collins supposes that the separation of the iris from the posterior surface of the cornea, which should occur normally prior to birth, fails in whole or part, owing to reasons that are yet imperfectly understood. In this way a congenital anterior synechia, extending more or less around the sinus of the anterior chamber, is formed. According to another view (of which I am personally an adherent), the adhesions in question result from an intra-uterine inflammation of the iris and adjacent structures. I am myself convinced that this represents the correct view, and I would say that such intra-uterine inflammation is closely connected with congenital syphilis. At all events, of nine patients under my care, seven exhibited conclusive signs of syphilis, while in the remaining two there was strong collateral evidence for believing that disease to exist. I quote the following as a typical case of the kind :

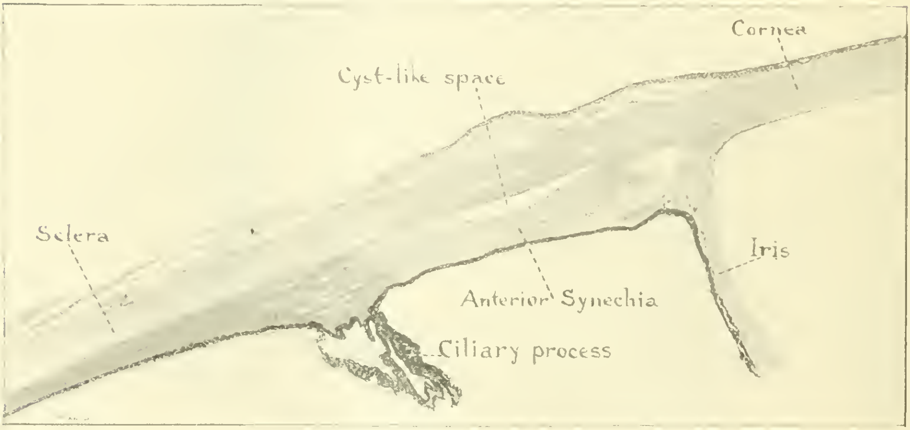

Fig. 2.—Absolute buphthalmos. (Evelyn L—, aged 7 years.) The specimen (magnified 20 diameters) shows that a wide fibro-cellular adhesion exists between the root of the iris and the corresponding part of the cornea. The two structures are not in accurate apposition at all points, so that a cyst-like space exists at one place. The specimen also shows the ciliary processes and the unaffected part of the iris and cornea. It will be noticed that the iris is retroflexed.

(8) Violet M—, aged 5 weeks, attended the North-Eastern Hospital for Children on February the 9th, 1905, on account of discharging eyes. The baby was breast-fed. There had been two living children in the family, then three born dead at about term, and, lastly, the patient. She was an emaciated, "snorting" infant with depressed bridge of the nose and red and desquamating palms and soles and excoriated skin about the mouth. The corneæ were somewhat globular and slightly hazy, and both eyes were larger than natural. Tension was thought to be a little raised. Under prolonged treatment (physostigmine and mercury with chalk), the baby regained excellent health, tension became normal, and the corneæ clear, and the eyeballs showed no tendency to further enlargement.

Buphthalmos occasionally occurs in several members of the same family. The most remarkable instance of the kind with which I am acquainted was reported in 1898 by Dr. Walter B. Johnson ('Annals of Ophthalmology,' vol. vii, p. 539). The first three children, two boys and a girl, of a "strong and healthy" couple, were not affected. The next three children, all females, manifested symptoms of infantile glaucoma, a disease cured, or at all events held in check, by the performance of sclerotomy or iridectomy at a very early age. At first sight this hereditary tendency to buphthalmos might be thought to tell in favour of Mr. Collins' developmental theory, but it is, to my mind, more in favour of syphilis contracted in the interval between the birth of the non-affected and the affected children. It is perhaps worth noting that of the photographs given of the three patients in Johnson's communication, two distinctly suggest a syphilitic type of face.

Whichever view be adopted as to the origin of the synechiæ, whether congenital or inflammatory, the result of the adhesions as regards the eyeball will, of course, be the same, namely, blocking of the angle of the anterior chamber, and consequently impeded exit of fluid into Fontana's spaces and Schlemm's canal. This would account for the deep anterior chamber which is so marked a feature in most cases of buphthalmos.

There are yet other theories with regard to the pathogenesis of buphthalmos. Thus, Angelucci believes that the condition is essentially connected with disturbance in the vaso-motor mechanism. He explains the disease by assuming a congenital lesion in the bulbar centre of the sympathetic, causing first vaso-dilatation and then hyper-secretion. In connection with Angelucci's theory, the fact may be mentioned that Lodato discovered a marked hyperæmia of the superior cervical ganglion on the affected side of a rabbit presenting unilateral congenital buphthalmos.

Buphthalmos must be carefully distinguished from an allied condition which very occasionally follows cases of severe interstitial keratitis and gonorrhœal ophthalmia. These may be regarded as instances of secondary buphthalmos, reserving the name "primary" for the disease now under discussion. The diagnosis of primary buphthalmos can offer no difficulties, particularly if one eye alone be affected. It is, however, possible that the slighter grades may be overlooked or mistaken for something else, as, for example, so-called "congenital opacities of the cornea." Again, I have known the disease confused with interstitial keratitis, as in the following case:

(9) Lily W—, aged 6 months, attended the North-Eastern Hospital for Children on October the 24th, 1900, when a diagnosis of interstitial keratitis was made on account of the cloudy corneæ and of a history pointing to syphilis. When I saw the child a week later, I found a "snuffling" infant, who showed traces of a recent ulcerous eruption of the vulva and anus. The eyes were said to have been affected for about three weeks. The eyeballs were obviously large, the transverse diameter of the corneæ measuring 14 mm. The corneæ were globular, with a good deal of haze. The last-named took the form of a Y-shaped figure, whose prongs were occupied by faint, punctate opacities. Discs cupped. Tension raised. The muco-purulent discharge present was connected, I thought, with congenital syphilis.

In buphthalmos, as in most other diseases, we must expect to meet with mild and severe cases, a somewhat obvious point upon which too little stress is sometimes laid by writers on the subject. Treatment, in my opinion, is by no means so hopeless a thing as one might gather. The disease, it is true, may progress to absolute blindness, but, on the other hand, it may undergo cure, either spontaneously or otherwise during the first few years of life. In spontaneous cure it has been suggested that the adhesions shown to exist between the iris and the cornea become stretched coincidently with the growth of the globe, and thereby cease to obstruct the passage of aqueous humour from the eye (E. T. Collins).

Cases of mild buphthalmos are unquestionably amenable to local treatment by myotics and general treatment by mercurials, but, so far as I have seen, treatment, if it is to be crowned with ultimate success, must extend over several years. In several of the more severe cases I have obtained good and apparently permanent results by the performance of large iridectomies, and I am by no means certain that the ordinary dictum, namely, not to operate, is one that should invariably be acted on. It is clear, however, that operation should be undertaken at as early an age as possible. In long-standing cases the iris is far more likely to be torn away from the synechiæ instead of from the ciliary body, which is necessary for relieving the tension. The analogy with very chronic glaucoma, in which the same thing is liable to occur, is complete. The different views held with regard to the value of operation are possibly connected very closely with the stage of buphthalmos at which iridectomy or sclerotomy is adopted. Professor Haab (2) tells us that "infantile glaucoma can be cured by repeated sclerotomy if begun early enough"; Dr. B. Stölting (3) by the same means has obtained encouraging results in five children whose ages ranged from 7 months to 2 years; Schoenemann (4) has reported seven cases (thirteen eyes) treated with success by non-peripheral iridectomy. Schoenemann's cases were watched for periods ranging from three to six years, so that his communication is particularly valuable. Dr. H. R. Swanzy (5), on the contrary, says in so many words that "iridectomy and sclerotomy are alike followed by disastrous results in this disease." When all is said and done, however, it is probable that truth, as usual, lies somewhere between the extreme positions taken up by the authors quoted.

Literature.

1. Collins.—'Researches into the Anatomy and Pathology of the Eye,' 1896.
2. Haab.—'Atlas of the External Diseases of the Eye,' 1899, p. 210.
3. Stölting.—'Eighth International Ophthalmological Congress,' 1894, p. 217.
4. Schoenemann.—'Arch. f. Augenheilk.,' October, 1900.
5. Swanzy.—'Handbook of the Diseases of the Eye,' 1903, eighth edition, p. 391.

(*To be continued.*)

CONGENITAL MULTIPLE OCCLUSIONS OF THE SMALL INTESTINE.*

By J. G. Emanuel, M.D., B.S., B.Sc., M.R.C.P.(Lond.)

Physician to Out-patients at the Queen's and the Children's Hospitals, Birmingham.

The small intestine is less often the seat of congenital malformations than either the œsophagus above or the colon, the rectum, or the anus below. The commonest situations for congenital malformations in the small intestines are :

(1) The duodenum at the site of the opening of the bile and the pancreatic ducts.

(2) At the juncture of the jejunum with the duodenum.

(3) The ileum, a short distance above the ileo-cæcal valve, at the point where the omphalo-meseraic duct is given off.

The following case is, in the opinion of the writer, unique in that the small intestine is occluded in no less than three situations, while in five other places the lumen of the bowel is practically obliterated by annular constrictions giving rise to a localised distension of the intestine immediately above and a relative collapse below the points of constriction.

This remarkable specimen was taken from an infant that was admitted into the Children's Hospital under the care of Mr. Leedham-Green as a case of "imperforate anus." The child was a seven months' baby, and for a seven months' baby was well developed, but its skin was of a peculiar coppery hue (it looked like a half-Indian baby), and the nurses in the ward named it the "bronze baby."

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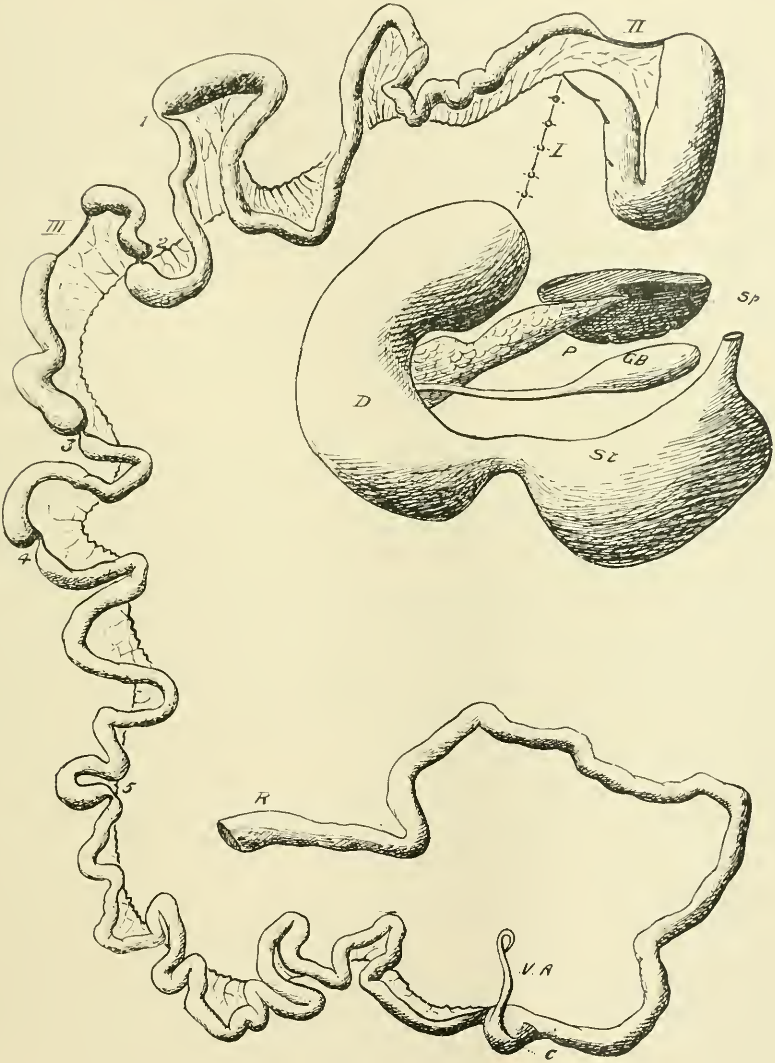
* The specimen was shown at the meeting of the Society for the Study of Disease in Children held on January the 20th, 1905.

Soon after its admission an enema was given, a soft gum-elastic catheter being easily passed three or four inches up the rectum, and a large motion of meconium of normal appearance was passed. This result of course proved that the rectum was patent. The child vomited all its milk from birth until it died, nine days later, operative interference being deemed inadvisable.

At the autopsy all the organs were found to be healthy, with the exception of the small intestine. On opening the abdomen the most conspicuous feature was a hugely-distended duodenum, which was of even greater volume than the stomach. The cause of this distension was found to be a complete obliteration of the intestine at the duodeno-jejunal juncture, shown by the line —o—o—o—o— in the figure and marked I. The wall of the distended duodenum was obviously hypertrophied. The stomach wall was also hypertrophied. The pylorus was normal and the œsophagus was healthy. The stomach and the duodenum were void of contents. The first 2½ to 3 inches of the jejunum were distended in the peculiar manner shown in the figure, and this distension was due to another obliteration of the bowel, marked II in the figure. At II the bowel was merely represented by an impervious thickening of the free edge of the mesentery half an inch in length. Still lower down in the intestine, at III in the figure, there was an exactly similar condition present, viz. a complete obliteration of the lumen, the bowel being again represented by a thickening of the free edge of the mesentery. In addition to these three situations in which the bowel was completely occluded, there were five other places, 1, 2, 3, 4, and 5, in which the bowel showed annular constrictions of such completeness, that immediately above the constrictions the intestine was distended, while below it was relatively collapsed for a short distance. The wall of the bowel in these distended parts was so thinned that the contents of the gut were visible through the wall, and these contents appeared to the naked eye to resemble ordinary meconium. Of these constrictions the most marked was that most highly situated, viz. 1, whilst the lowest, 5, was the least obvious, and in fact the whole series of five shows a progressively decreasing order in the completeness of the constriction. The figure shows the situation of the cæcum and of the vermiform appendix, and so it is clear that all these abnormalities are situate in the jejunum and perhaps in the upper part of the ileum.

Some other points of interest worthy of note in connection with this case are :

(1) Normal meconium was passed as a result of an enema soon after the admission of the child into hospital, and yet neither bile nor any ingested products, *e.g.* desquamated epithelium obtained from the amniotic fluid, could have gained access to the intestine below the



Two-thirds ($\frac{2}{3}$) natural size.

I, II, III. Sites of occlusion. *1, 2, 3, 4, 5*. Sites of constriction. *St*. Stomach. *D*. Duodenum. *P*. Pancreas. *G.B*. Gall-bladder. *Sp*. Spleen. *C*. Cæcum. *V.A*. Vermiform Appendix. *R*. Rectum.

duodeno-jejunal juncture. This shows that although bile and desquamated epithelium may contribute normally to the formation of the meconium they are not essential, and that the meconium is chiefly derived from the secretion of the alimentary canal.

It may be contended that both these products had found their way into the bowel before its lumen had become obliterated; this is possible, but it must have occurred very early in intra-uterine life, because the occlusions at II and III must be of very early formation, if indeed the intestine was pervious from end to end at any date. In connection with the part played by the bile in the formation of the meconium, it may be borne in mind that in cases of congenital obliteration of the bile-ducts it is the rule for normal meconium to be passed soon after birth, but for all subsequent motions to be devoid of bile-pigment.* Foster speaks of a considerable quantity of meconium being found in the fœtus in cases where the liver has been absent.†

(2) With so complete an obstruction as occurs at the duodeno-jejunal juncture one might have expected to find the bowel below in a state of collapse, and yet instead of this we find that immediately above the occluded parts II and III and the constrictions I to 5 the bowel is actively distended with what appeared to be ordinary meconium. It is clear that the whole of the meconium within the jejunum, the ileum, and the colon must have been secreted from the glands in the intestinal walls, and that this secretion is capable of going on in a segment of intestine completely cut off above and below, *e. g.* in the segment between I and II, and that between II and III.

(3) Nine days is a long time for an infant—especially a premature infant of seven months—to survive without any food.

Congenital malformations of the intestine are generally said to be either the result of an intra-uterine peritonitis giving rise to bands of adhesion which cause strangulation, or to be due to an arrest of development. In the present case there were no signs of peritonitis, either recent or old, and so we are led to adopt the second somewhat unsatisfactory theory and say that the anomalies described above are due to an arrest of development. It seems to the writer, however, that rather than being due to an arrest of development, these abnormalities are due to an accident in the course of development of the nature of strangulation, and that two stages may be distinguished in the process, viz. a strangulation at the duodeno-jejunal juncture during the formation of the duodenal loop, and later on the formation of a number of more or less complete volvuli during the process of lengthening of the intestine and the formation of its coils. It will be remembered that the duodeno-jejunal juncture is the most fixed portion of the small intestine, being held in position by the superior mesenteric vessels which groove its anterior surface, and by a strong fibrous band descending from the left crus of the diaphragm and the tissue round the cœliac axis. This band, better marked in the fœtus and young child than in the adult, contains plain muscular fibres and is called the musculus suspensorius duodeni (Quain's 'Anatomy,' Vol. III, part iv, page 102). This, moreover, is the point where the gut first receives a full investment of the peritoneum. The duodenal loop is formed by the twisting of the embryonic stomach, which early occupies a median position, with its surfaces right and left, its greater curvature posterior and its lesser curvature anterior. The pyloric end becomes tilted away from the vertebral column in such a way that the right side of the stomach becomes its posterior surface and the duodenal loop is thrown over to the right side of the abdomen. This duodeno-jejunal juncture is therefore a very likely place for an intra-uterine obstruction to occur, and statistics, in fact, support this view, for it is the second situation in point of frequency for congenital malformations of the small intestine to occur. If, then, we grant that this was the main obstruction, it is fair to conclude that later on in intra-uterine life, when the small intestine, originally short and straight, lengthened and became thrown into coils, it underwent an amount of twisting, with the production of a number of volvuli of more or less complete formation, and that this twisting gave rise to the complete occlusions II and III, as well as to the constrictions 1-5. In support of this view it is to be remembered that in these two situations the thickened free margin of the mesentery represents the intestine, *i. e.* the intestine is not completely obliterated, but is represented by impervious fibrous cords, the free margin of the mesentery.

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* Rolleston, 'Diseases of the Liver, Gall-bladder, and Bile-ducts,' p. 647.

† Foster, 'Text-book of Physiology,' vol. iv, p. 1527.

The writer has not been able to find records of a case similar to the above. Hirschsprung, of Copenhagen, in a thesis on congenital occlusions of the small intestine, of which an epitome is to be found in the 'Medico-Chirurgical Review' for 1862, collected records of 31 cases. Of these, in 16 (more than 50 per cent.) the lesion was situate in the duodenum, in 6 in the ileum close to the cæcum, and therefore probably connected with the omphalo-meseraic or vitelline duct, and in 9 cases the lesion was situated in the intervening portions of the gut. In no instance, however, was the abnormality repeated in the course of the canal, and it is in the multiplicity of the occlusions that the present case differs from those in the above series.

In conclusion, I would express my thanks to Mr. A. E. R. Weaver, the resident medical officer of the Children's Hospital, for his excellent drawing of the specimen, and to Mr. Charles Leedham-Green for his courtesy in allowing me to publish this case.

DEATH AFTER INSERTING A NEEDLE FOR SUPPOSED EMPYEMA.*

By Joseph H. Wilks, M.A., M.B., B.C.(Cantab.),
Surgeon to the Children's Hospital, Sheffield.

The point of interest in the following case consists in the fact that the insertion of an exploratory needle into the left side of the chest was almost instantly fatal.

The facts are as follows:

The patient, a female child, aged 3 years, was admitted into the Sheffield Children's Hospital on April the 14th, 1905, with a history that six months previously she had had measles, from which she had never properly recovered; but with the exception of this illness she had always been a healthy child. On admission her temperature was 101° F. She was sufficiently plump and well nourished, and did not seem distressed in breathing, but was troubled with a peculiar "brassy" cough, and there was slight clubbing of the fingers.

Examination of the chest showed a fair amount of movement of the thoracic wall, but it was less on the left than on the right side. Pulsation was unduly marked around the apex of the heart over an area of about 1½ inches, and there was a faint mitral systolic murmur. The apex beat was in the fifth space, just outside the nipple line. There was dulness to percussion all over the left side, being especially evident in the supra-scapular region.

On auscultation the respiratory sounds on the left side were nowhere well heard, were universally weak, and had a soft "blowing" character, with prolonged expiration. Over the lower two thirds anteriorly they were scarcely heard at all.

Posteriorly they were "tubular" all over and very weak, and no crepitations were detected. On the right side the percussion note appeared to be normal, but the breath sounds were unduly harsh. The chief feature of the respiratory sounds was their weakness and soft blowing or tubular character.

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* Read at the Provincial Meeting of the Society for the Study of Disease in Children, at Sheffield, on Saturday, June the 17th, 1905.

The next day, the physical signs being the same, an exploring needle was inserted by the house-physician by my request and in my presence. No anæsthetic was used, and the child was kept lying down. The puncture was made in the eighth space, just below the angle of the left scapula, and a few small flakes of "curdy" pus were withdrawn, with some blood. Immediately afterwards blood, of a darkish hue, was seen to be issuing in a continuous stream from the needle, and almost simultaneously the child gave a cough, and expelled some blood from its mouth on to the pillow. The needle was instantly withdrawn and a finger placed over the site of puncture. The pupils dilated, the sphincter ani relaxed, the lips changed colour, and no efforts at respiration were made. The child appeared to be moribund at once, and it was apparent from the first that its condition was extremely grave. The fauces were cleared, and artificial respiration commenced, and a few gasps were produced, but no proper inspiratory effort. Five minims of adrenalin solution and gr. $\frac{1}{60}$ of strychnine were injected hypodermically. The foot of the bed was elevated, and cloths wrung out of hot water applied to the precordium. The adrenalin injections were twice repeated, and saline solution given *per rectum*. The artificial respiration was continued for almost an hour, but from the first no sign of recovery was shown. It was thought that an intercostal vessel might have been wounded; as against this, percussion of the chest showed no alteration of the dulness; but on the other hand, through the abdominal wall an increasing fulness, amounting to a slight bulging in the epigastric region, was plainly visible, suggesting the entrance of blood into the stomach either through a puncture or through being swallowed. For a short time blood continued to flow passively out of the mouth, and then from the nostrils in addition, becoming of a darker coffee-ground colour.

At the post-mortem examination two days later, the larynx, trachea, heart, and lungs, were removed *en masse*. The left pleura was found to be adherent to the chest-wall all over, and also to the diaphragm. There were a few small clots on the surface of the lung at the site of puncture. The left lung appeared appreciably smaller than the right, and to have a firmer consistency; so that it roughly retained the shape and moulding of the pleural cavity. The area of the heart left uncovered by the retraction of the lung was especially noticeable, and the lung itself had numerous small grey tubercles dotted all over it. The site of puncture by the needle was seen about an inch from the base of the lung whose substance it had penetrated for a short distance. Pressure at this point caused blood to flow out, and section through the puncture showed an absence of healthy lung-tissue which had been partially replaced by more solid and indurated areas containing a number of small caseous foci. The smaller bronchi were occupied by blood-clots and puriform exudations, which were easily dislodged by squeezing. There were no blood-clots in the upper lobe, but the larger bronchi and trachea were full of blood-stained frothy mucus.

Professor Arthur Hall, of University College, Sheffield, made a microscopical examination of the heart and left lung, and reported as follows: "Section of lung is tuberculous, with well-marked peri-bronchial inflammation, and a more or less irregular broncho-pneumonia. The heart appears to be in a condition of cloudy swelling of the muscle-fibres, but there is no evident fatty degeneration."

The lower lobe of the right lung was engorged and appeared to be in an early stage of red hepatisation, and there were also a few scattered miliary tubercles. Situated at the bifurcation of the trachea was a much enlarged gland, occupied by softened disintegrating caseous material. *The stomach* contained a quantity of dark altered blood, part of which was in clots. It was estimated that the quantity of blood lost did not amount to more than six ounces.

Pericardium.—This was almost completely left uncovered by retraction of the lung. It contained about 1 oz. of clear serous fluid. Heart-muscle pale and yellowish in colour, and flabby, weight $2\frac{1}{4}$ oz. Right ventricle dilated. A few small whitish nodules were noticeable along the free edge of the mitral valve, one of these being distinctly larger than the others, and being situated on the middle cusp.

Liver.—A few small grey tubercles on the surface of the liver, normal on section.

Spleen.—Post-mortem lividity on the posterior surface at the lower extremity, a milk spot the size of a sixpence on its anterior surface. Numerous small grey tubercles all over it.

Kidneys.—Right pale, capsule stripped off easily, a blood-clot over the right supra-renal capsule and upper extremity of the right kidney (probably due to the artificial respiration used at the time of collapse). Left kidney in a similar condition.

Descending colon and sigmoid flexure.—Collapsed and contracted.

Intestines.—Not examined in detail.

Mesenteric glands.—Enlarged.

Brain.—Not examined.

Six or seven similar cases have been recorded in the 'Lancet,' in 'St. Thomas's Hospital Reports,' and in the 'American Journal of the Medical Sciences,' and a brief but good summary is given in an editorial "On Sudden and Unexpected Death in Children," contained in the January number for this year of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.' In these cases death is variously given as being caused by reflex inhibition of cardiac and respiratory centres, due to irritation of some small branches of the vagus by the exploring needle, or as being caused by asphyxia. In the case just related death, in my opinion, resulted, not from asphyxia, but from cardiac failure in a patient suffering from and in a debilitated condition due to tuberculosis with chronic or fibrocaseous changes in the lungs.

For much of the above I am indebted to the careful notes of Dr. Margaret Duncan, House-Physician to the Children's Hospital, Sheffield.

DEATH UNDER CHLOROFORM; ENLARGEMENT OF THE THYMUS.

By E. DOUGLAS WOLFF, M.R.C.S., L.R.C.P.,
House-Surgeon at the North-Eastern Hospital for Children.

THE following case of death under chloroform presents points of interest both from the symptoms exhibited and the post-mortem appearances.

C. W—, a male, aged 11 months, was admitted into the North-Eastern Hospital for Children on July the 6th, 1905, under the care of Mr. Sydney Stephenson, who has kindly allowed me to publish notes of the case. The patient was suffering from double congenital cataract.

On July the 14th discision was performed on one eye. Chloroform was given, and nothing untoward arose during or after its administration.

A second needling operation was performed on the same eye on July the 27th, chloroform being again administered. A Skinner's mask was used and a dilute vapour given, induction taking about seven or eight minutes. The degree of anæsthesia was such as to produce a contracted pupil and absence of corneal reflex in the opposite eye, the eye operated on having had atropine introduced previously. The pulse was regular and of good volume, and the respiration quiet and regular during this time. The administration was stopped, the operation performed, which lasted well under a minute, and a pad and bandage had been applied, when it was noticed that the patient's lips were rather blue. The tongue was at once pulled forward, and the throat cleared with a swab. The pulse was very feeble, but respiration, though somewhat shallow, was still maintained. Artificial respiration was at once started by compression of the thorax in combination with rhythmical traction of the tongue, and at the same time brandy was injected hypodermically and the child held head downwards. The pulse almost immediately became imperceptible, and though the respiration was also failing, spasmodic efforts at breathing were made by the child for some time after all signs of heart-beat had ceased. Although the patient ceased to make any effort to breathe, artificial respiration was kept up for about three quarters of an hour longer, when it was finally given up as useless.

Post-mortem examination.—There was no evidence of disease or abnormality in any of the viscera except the lymphatic glands, which were everywhere enlarged, as well as the thymus gland. The spleen was quite normal. Unfortunately, I did not take any measurements of the thymus at the time, but I found it was just 1 oz. in weight.

This case I consider of interest, as in most examples of death under anæsthetics no structural changes have been found post mortem. In this case also heart failure was primary and respiratory failure secondary, whilst in those cases which I have seen in which any trouble has arisen in the administration of the anæsthetic (I have seen no deaths) respiratory failure has always been primary. I may add that the patient was a well-nourished, apparently healthy child, and nothing abnormal was found during life.

Editorial.

EXPLORATORY PUNCTURE OF THE CHEST—ABUSE OF THE NEEDLE—A WARNING.

In these days of multifarious aids to clinical diagnosis exploratory puncture of the chest is looked upon by the younger members of the profession as a harmless proceeding, and on a par with the use of the stethoscope for the examination of children's lungs indeed, there are some who give precedence to the needle.

As an adjunct, *a sequence* to a careful physical examination of the chest by percussion and auscultation and conducted with care and skill, combined with the necessary clinical experience, we recognise the value of exploratory puncture; but dissociated from the older fashioned practice just related, we consider it a very dangerous method in the hands of the reckless and inexperienced.

We think the time has arrived when recently qualified house-physicians and others should not be encouraged to undertake random exploratory punctures into infantile tissues on their sole responsibility and as a matter of routine.

It would appear that there must be something radically wrong with the clinical teaching of these young practitioners at the medical schools, judging from the number of times we have known them to explore cases of acute pneumonia in children quite unnecessarily on the assumption that fluid was present, and from their blind faith in the omnipotence of the needle in the diagnosis of childish lung complaints.

To recognise the fact that empyema is a possibility, and that it occurs more frequently in the child than in the adult, is but to guard against mistakes; but it would appear that an impression is gaining ground—doubtless an article of faith in some quarters—that lung disorders in the young are nearly always empyematous, an impression which is unwarranted and entirely wrong.

To see with the mind's eye fluid in every child's chest and to use the needle without taking the trouble to make any other than a cursory examination is but to court disaster and to neglect those opportunities of learning the art of diagnosis which it is so advantageous for the rising generation of clinicians to acquire. Further, children are not inanimate objects, and such proceedings should not be viewed as justifiable routine methods of examination, for they are by no means painless.

And now to the more important object of our remarks, the dangers of the operation.

In the January number of the JOURNAL, in an Editorial on "Sudden and Unexpected Death in Children," we lightly touched upon the fatalities which had been recorded in sequence to this supposed trifling little operation.

Dr. George Carpenter was, we believe, the first to call attention to the dangers of exploratory puncture of the chest, in the 'American Journal of the Medical Sciences,' in 1893.*

The accident happened to a child under his care, suffering from cirrhosis of the lung. The case was sent into the wards of the Evelina Hospital for Children by him, and the opinion expressed that there was no fluid present. The chest was explored by the resident medical officer. Immediately the child coughed, blood began to pour from her mouth and nose, and she died asphyxiated. Post mortem the lung was found to be cirrhosed. The stomach was full of blood, there was some in the duodenum, the bronchi were filled with blood-stained mucus which extended on the right side as far as the medium-sized bronchi and on the affected side into the smallest tubes. The larynx was full of frothy blood-stained mucus.

Three cases were recorded by Dr. A. E. Russell in 1898,† and three by Dr. Thomas Oliver in 1904.‡ Of the three cases collected by Dr. Russell—

In a girl, aged 8 years, one exploration was made into a presumed empyema. A small amount of frothy blood appeared at the mouth, lividity supervened, associated with strong double convergent squint and rigidity of the arms. The pulse stopped, and breathing continued irregularly for a minute or two after that. The post mortem showed the presence of acute inflammatory mischief in a lung undergoing fibroid change from antecedent disease.

In a girl, aged 7 years, suffering from broncho-pneumonia, the chest was explored. The child immediately lost consciousness, turned very pale on the right side of the face, and also slightly cyanosed. Two hours after that she became convulsed and did not regain consciousness, and died five days later. The lung was in a condition of collapse, with some broncho-pneumonia. The brain was much injected, but there was no excess of fluid in the ventricles.

The third case happened in an adult with old pulmonary tuberculosis who had chronic basal pneumonia. A *second* exploration was followed by syncope—irregular and spasmodic heart beats—and immediate cessation of respiration, convulsions, left hemiplegia with blurred optic discs and a flame-coloured patch at one of them, and death three days later. There were no coarse cerebral lesions. The heart showed some degenerative changes.

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* October, 1893, pp. 422, 423.

† 'St. Thomas's Hospital Reports,' vol. xxviii.

‡ 'Lancet,' January the 2nd, 1904.

Dr. Oliver's cases occurred in adults. In one the man fell back dead directly after a *second* puncture was made. No fluid was withdrawn, but there was pus in the pleura and the lung was consolidated. In another man puncture was followed by heightened respiration-rate and a few hours later by delirium and death. In the third case exploration was followed by marked cyanosis and collapse and the expectoration of large quantities of a thin foamy mucus. He rallied in two days.

Two fatal cases have been reported to the Society for the Study of Disease in Children during the session 1904–1905, one by Dr. Fortescue-Brickdale, of Bristol, in December, 1904,* the other by Dr. Joseph H. Wilks, of Sheffield, at the provincial meeting held at Sheffield in June last.

Dr. Fortescue-Brickdale's case was that of a boy, aged 2 years, who was admitted into the Bristol Children's Hospital for pneumonia. He remained under care for some time, and was subsequently thought to have developed an empyema, and explored. Nothing but blood was withdrawn by the syringe. The child became very restless and almost immediately coughed up a little frothy blood. Cyanosis appeared and the respirations became imperceptible and in about ten minutes the boy died. Subcutaneous stimulation and artificial respiration proved unavailing. There was no post-mortem examination.

The history of Dr. Joseph Wilks' case, a full account of which appears in the current issue, is as follows: In a girl, aged 3 years, immediately after exploration blood issued in a continuous stream from the needle, and almost simultaneously the child gave a cough and expelled some blood from its mouth on to the pillow. The pupils dilated, the sphincter ani relaxed, the lips changed colour, and no efforts at respiration were made nor was there response to artificial respiration. Bleeding continued into the stomach meanwhile, which was found to contain a quantity of dark altered blood. The smaller bronchi of the affected lung were occupied by blood-clots and puriform exudations. The larger bronchi and trachea were full of blood-stained frothy mucus. The lung was tuberculous, with well-marked peribronchial inflammation and a more or less irregular broncho-pneumonia. The heart was yellowish in appearance and flabby, with the right ventricle dilated, but Professor Arthur Hall, of Sheffield, could find no fatty changes, only cloudy swelling of the muscle-fibres.

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* 'Reports of the Society for the Study of Disease in Children,' vol. v, No. 36.

At the discussion which followed Dr. Wilks' communication, Dr. Carpenter, who narrated the case just related at that meeting, stated that on one or two occasions he had been alarmed by the appearance of small quantities of frothy blood in the mouths of children, and by pallor following exploration. On the other hand, several well-known experts in children's diseases who took part in the discussion had during a long experience never met with any mishaps from the practice.*

In THE BRITISH JOURNAL OF CHILDREN'S DISEASES for August, 1905,† Dr. Porter Parkinson narrated a fatality which happened to a case under his care at the North-Eastern Hospital for Children in a child, aged 4 years. Dr. Parkinson's diagnosis was chronic interstitial pneumonia, but the chest was explored in order to exclude the presence of fluid. The child at once turned pale, the pulse began to get small, and at frequent intervals about a teaspoonful of frothy blood escaped from the mouth, and the patient died within two minutes of the puncture. At the post-mortem examination the lung was found to be cirrhotic; one or two of the bronchi supplying the lower lobe were full of blood. The stomach was also distended with blood-clot. It was seen that the puncture had entered the lung well above the diaphragm, and the blood in the stomach was blood which had been swallowed. He stated further that in three cases under his care limited pneumo-thorax, and in one of them a limited amount of emphysema, was produced by house-physicians who had frequently punctured the chest previously and without accident.

In August last Coroner Troutbeck held an inquest on a boy whose chest had been explored at St. Thomas' Hospital under an anæsthetic and who, according to a house-physician's evidence, succumbed immediately the chest was punctured by the needle. It appears from the report of the evidence that death was attributed to reflex cardiac failure, and that the left lung had been rendered useless owing to disease. The account of the autopsy on the lad is not of scientific accuracy, but the case nevertheless is of extreme interest and of great educational value as yet another illustration of death from exploratory puncture of a diseased lung. That the few examples—some eleven in all, seven of them in children—we have been able to find in the literature represent *all* the fatalities, immediate or remote, that have occurred in practice from the use of this method of diagnosis we do not for one moment believe. Indeed, we think that in the future needling of the chest will be found to be a more common cause of death than is supposed at present if explorations are conducted upon the same lavish scale then as now.

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* For a full report see the "Discussion" following Communication No. 92, 'Reports of the Society for the Study of Disease in Children,' vol. v.

† For the full text of Dr. Porter Parkinson's remarks on this subject see pp. 339, 340.

What is the explanation for death in these cases? Dr. Russell attributed the fatal event in the cases narrated by him to reflex inhibition of the respiratory and cardio-inhibitory centres in the medulla following irritation of the terminal filaments of the pulmonary fibres of the vagus. Cerebral anæmia was accounted for by cardiac inhibition and lowered blood-pressure. The persistence of cerebral symptoms he attributed to degenerative changes in the nerve-cells of the cortex from circulatory disturbances. Doubtless the cases in which death occurred without loss of blood are to be explained in this way, and vaso-motor disturbance would account for the expectoration of large quantities of thin, foamy mucus, probably produced by œdema of the lung.

In the cases narrated by Dr. George Carpenter, Dr. Joseph Wilks, and Dr. Porter Parkinson the added factor of considerable pulmonary hæmorrhage has to be considered.

In Dr. Carpenter's case the hæmorrhage into the bronchial tubes was considerable, and the death of the patient was attributed by him to asphyxia. Puncture in Dr. Wilks' case was immediately followed by cessation of respiration, so that it would appear there was an initial reflex action on the respiratory centre, but it may be noted that at the autopsy the large bronchi were full of blood-stained frothy mucus, a fact hardly in consonance with sudden arrest of respiration. Perhaps artificial respiration produced this condition. Cardiac inhibition could not have been a prominent symptom, because there was continuous loss of blood following the apnœa. Dr. Wilks attributed the death to cardiac failure in a debilitated patient, and not to asphyxia. The loss of blood in Dr. Porter Parkinson's case was considerable, there being half a pint in the stomach, but, as death occurred within two minutes of the puncture, he attributed it, in part at least, to reflex cardiac failure. But judging from the few fatal cases of hæmoptysis that we have seen in debilitated tuberculous children, it does not require a large hæmorrhage into the bronchial tubes to bring about a speedily fatal issue, and death may be attributed in part to asphyxia and in part to fainting from loss of blood.

What measures are to be adopted to avert misfortune, to prevent death, in the event of sudden syncope? It is well to administer a small dose of brandy shortly before the operation. It is also advisable to perform the operation in the recumbent position, and the child should never be allowed to contemplate the preparations for and the arrangements at the time of needling.

Should sudden syncope occur cardiac stimulants, such as ether and strychnine, must be given hypodermically and artificial respiration at once resorted to. To control cerebral anæmia it has been suggested that the head and shoulders should be allowed to hang over the bed while artificial respiration is in progress.

In those unfortunate cases where death takes place from loss of blood due to injury of a large blood-vessel, whether it be from asphyxia or from fainting from loss of blood, it does not appear that any of the treatments that have been advocated would be useful; on the contrary, such measures would probably be detrimental, and the treatment for such a condition should rather be that for hæmoptysis.

The Golden Rules of practice should be never to explore a case of fibroid pneumonia—to needle such is to court disaster—and never to regard exploratory puncture of the chest as a trifling operation. When exploring, the pulse and respiration should be carefully watched, and any signs of failure of either or both functions should be promptly dealt with.

Exploration of the pleura if there be fluid contents may be regarded as a perfectly safe procedure, but puncture of an inflamed or collapsed or tuberculous lung is a risky operation; all the more reason, therefore, why in a doubtful case of fluid the greatest care should be taken before deciding to needle.

We invite contributions to the JOURNAL from all countries on this most important subject.

Abstracts from Current Literature.

Medicine.

Enuresis in children (*'Post Graduate,' December*, 1902).—**Hermann B. Sheffield** divides the causes of nocturnal enuresis into (*a*) *functional*, due either to atony of the sphincter or to spasm of the detrusors of the blood, and (*b*) *organic*. This last includes a large number of conditions, such as phimosis, hernia, undescended testicle, worms, gonorrhœa, constipation, cystitis, disease of the spinal cord, etc. In the treatment it is most important to ascertain the cause first of all. Children should be trained to void their urine regularly every three hours, as many of the conditions above mentioned, *e.g.* atony, cystitis, etc., are secondary to retention of urine for long periods. A. ERNEST JONES.

Ætiology of infantile eczema (*'Brit. Journ. Dermat.,' May, June, July*, 1905).—**A. G. Hall.** An analysis of 60 cases shows males were more frequent than females. More of the children were born in the middle or late, rather than in the early period of maturity. First-born children were least affected. Only a small percentage of mothers had suffered from eczema; many showed stigmata of seborrhœa; nearly one half had not suffered from any skin disease. Very few of the other children in the same families were similarly affected in infancy. Most of the cases began between the end of the first and the beginning of the fifth month. Ninety-five per cent. of the rashes first appeared on the head. Of 59 cases, 14 occurred in March, April, May; 3 in June, July, August, the warmest months; 18 in September, October, November; while 24 in December, January, and February, the coldest months; 86½ per cent. were breast-fed when the rash appeared. In most of the cases the eruption preceded first dentition, often by an interval of several months. In most of the cases there was no wasting, vomiting, or diarrhœa. In about 15 per cent. there was well-marked rickets; in more than 50 per cent. there was none. The symmetry of the eruption on the two sides of the body, in all parts affected, was usually noticeable. T. P. BEDDOES.

Infantile and juvenile tabes (*'La Presse Médicale,'* 1905, *No.* 40, *p.* 313).—**E. Hirtz** and **H. Lemaire**, from an analysis of forty-six genuine cases, excluding Friedreich's ataxy, etc., notice the following peculiarities:

In young subjects tabes is initiated most frequently by urinary troubles, less frequently by lightning pains or amblyopia, more rarely by gastric crises. The most constant functional disturbance of the pre-ataxic period of juvenile tabes is incontinence of urine; it occurs in about half the cases; it is much less frequent in adult tabes. It is otherwise with lightning pains; this mode of incidence is frequent in the adult (two thirds of the cases) and relatively rare in young subjects (less than one third). In 14 per cent. of the cases amblyopia was the trouble for which the children were brought by their parents; this unusual mode of onset explains the ease by which the diagnosis may be missed. Infantile tabes has a distinct symptomatology; in one sixth of the cases vesical trouble and derangements of objective sensation, such as anæsthesia or paræsthesia, were the only functional symptoms; the diagnosis was only arrived at by Westphal's symptom, Argyll Robertson pupils, and by looking for Romberg's sign. Nevertheless, striking symptoms are not wanting in tabes among children in whom lightning pains and visceral crises are met with, but they are less frequent than in adults. Inco-ordination is almost always slight and requires looking for; the authors know of only two cases where there was marked ataxy. In the young tabes develops with extreme slowness. According to the authors, the loss of the patellar and Achilles tendon reflex is of the utmost importance, and has been utilised by them to accept or reject cases published under the name of Tabes. So far there has not been an autopsy.

E. J. Cowen.

On respiratory insufficiency in patients with adenoid vegetations ('*Thèse de Toulouse*,' 1905).—**G. Rancoule.**—Examination of 105 children in the schools of Toulouse showed a proportion of adenoids of 7 to 8 per cent. It appears from the author's measurements that the lung capacity is diminished on the average by 225 cubic centimetres by adenoid growths in children of from 8 to 11 years of age—that is, by a fifth of the normal capacity. Harold Barwell.

The symptoms of diabetic coma in children ('*La Clin. Infant.*,' *June*, 1905, *p.* 360).—**P. Dupuy** in a thesis on this subject states that prodromal symptoms are very inconstant; odour of acetone was found in only three out of seventeen cases, Ebstein's cylinders were not noticed, diminution in quantity of urine was inconstant, and coma could rarely be predicted. In the period of invasion the child often complains of acute epigastric pain, the abdomen is distended, constipation almost constant, and there is nausea and vomiting of watery fluid. When coma supervenes the general state is already very bad, with great wasting and enfeeblement, the respiration is frequent and of a special type, full deep inspiration, the chest moving all of a piece, remaining thus a few seconds, then falling with an effort in a short expiration. Heart usually healthy throughout, and when coma occurs the beats are regular but progressively feeble, habitually 120–130 per minute even to 148. The polyuria which exists from the beginning is now markedly diminished; the urine is clear, limpid, and acid, containing sugar in abundance, but less than before the coma, during which it diminishes progressively until death, and sometimes disappears completely as in Hudson's case, where it ceased suddenly after the administration of chloral. Albumin may be found, but always in small quantities, and quite late. The smell of acetone in the urine is less marked than in the breath. Nothing remarkable as regards nervous system, patellar reflex often abolished, the lassitude and apathy of the prodromal period become accentuated, somnolence more marked. In the period of confirmed coma the pupils are fixed, equal, dilated, or contracted, normal reflex abolished, extremities blue, limbs flaccid, tongue dry, dyspnœa intense, respiration 32–48 per minute, pulse rapid and filiform. Death takes place without convulsions. VINCENT DICKINSON.

Pathology.

Absence of the large intestine ('*Australasian Medical Gazette,*' 1905, *vol.* XXIV, *p.* 210).—**J. B. Nash** and **J. T. Wilson** report an extraordinary condition in a girl, aged 5 years, who was operated on for removal of a foreign body from the small intestine. The cæcum and appendix were normal. From the cæcum the large intestine was continued as a short coil, passing across the pelvis to the true pelvic brim on the left side, and then downwards as the rectum. A short mesentery attached it to the posterior abdominal wall. The ascending, transverse, and descending colon and the sigmoid flexure were absent. The child made an uneventful recovery. Wilson explained the condition as the result of arrest of development.

EDMUND CAUTLEY.

The bacteriology of bronchopneumonia and lobular pneumonia in infancy ('*Montreal Med. Journ.,*' *June,* 1905).—**Martha Wollstein** wished to determine the relationship between the extent of the pneumonic areas and the variety of bacteria present, and the difference between the bacteriology of primary and secondary infections. In 33 cases of primary bronchopneumonia the pneumococcus was present in pure culture in 15, associated with streptococci in 7, and Staphylococcus pyogenes aureus in 3. The streptococcus was present alone in 2 cases, and along with the staphylococcus in 2; the staphylococcus was present alone in 2 cases and with Bacillus coli in one case, and with Streptococcus and Oidium albicans in one other. In the 2 cases of pure streptococcic pneumonia there was no pleurisy. The pneumococcus was present in 76 per cent. of the primary pneumonias, but in only 63 per cent. of the pneumonias secondary to enterocolitis, diphtheria, measles, meningitis, malaria, and other diseases.

J. PORTER PARKINSON.

On the etiology of three cases of chronic hydrocephalus ('*La Pediatria,*' *April,* 1905, *p.* 267).—**P. Sorgente** describes three cases from the "Tiburtino" Children's Hospital in Rome, in which there was constantly found in the cerebro-spinal fluid a diplococcus having the characteristics of the Weichselbaum type of meningococcus in two of the cases, and those of the Jäger-Heubner type in the other case. He considers the direct cause of the hydrocephalus in these two cases to be the meningococcus. Being one of the most important factors in the production of meningitis in infancy, this coccus can, however, under special conditions manifest its pathogenic power merely in the formation of a very thin meningeal exudation, or in an irritative action upon the ventricular ependyma and choroid flexus and production of hydrocephalus in a chronic form. In these cases the rational and efficacious method of cure would be one that acted on the cocci and on their products, and hence treatment by mercury and iodine give results less brilliant than in cases directly dependent on syphilis. In spite of this, however, this treatment combined with repeated lumbar puncture remains the most efficacious for attacking any form of hydrocephalus.

VINCENT DICKINSON.

An uncommon complication of typhoid infection in children ('*La Pediatria*,' *April*, 1905, *p.* 314).—**A. Baronio** describes this case in the 'Rivista di Clin. Pediat.,' February, 1905. A girl, aged 10 years, was suddenly seized with malaise, headache, shivering, and high fever, with delirium at night, followed by strabismus the next morning, the temperature remaining high, delirium, and diarrhœa. In this condition she was brought to the civil hospital at Casena, where her head was observed turned to the left, the sensorium abolished, the eyes turned inward, the pupils contracted and almost inactive to light, tendon reflexes brisk, absence of Babinsky's and Kernig's signs and of nuchal rigidity, tongue coated, red at edges, lips dusky, abdomen tympanitic, spleen swollen, lungs normal, heart, first sound muffled and slightly blowing at the apex and pulmonary region. Lumbar puncture yielded a little limpid fluid, which showed nothing by cytological examination. Urine albuminous, 3 per 1000; nothing important microscopically. Temperature ranged from 38·7° C. to 40·5° C. Patient died on fifth day after admission. Autopsy revealed congestion of intestinal peritoneum, specially in ileum; mesenteric glands enlarged; solitary follicles and Peyer's patches swollen and intensely hyperæmic throughout the intestine, but without ulceration; spleen swollen, hyperæmic, and soft; liver hyperæmic; kidneys normal; heart, on internal surface of left auricle, a reticulated yellowish exudate adherent to the endocardium; brain, a large clot in the superior longitudinal sinus; arachnoid and pia mater intensely injected, with hæmorrhagic infiltration of subarachnoid; in frontal and right parietal lobes a fluctuating swelling of 5 cm. diameter, with flattening of the superimposed convolutions; in right lateral ventricle a large fibrinous clot, with erosion of the white matter; erosion at the apex of the caudate nucleus; second, third, and fourth ventricles full of blood; the whole of the grey and white matter of brain and cord intensely injected. Culture examination of the spleen juice yielded a bacillus having the characteristics of Eberth's.

VINCENT DICKINSON.

Therapeutics.

Sequelæ of scarlet fever ('*Arch. of Pediat.*,' 1905, *vol.* XVII, *p.* 343).—**F. McEwen** mentions certain important means which may be used in managing and preventing the sequelæ of scarlet fever—(*a*) Prevention of infection by quarantine for seven to eight weeks or until desquamation has ceased; the use of an ointment, night and morning, of one dram of boric acid to one ounce of cocoa-nut oil, followed by a warm bath every fifth or sixth day. (*b*) The injection of Moser's serum: a polyvalent serum prepared by injecting horses with a mixture of living cultures obtained from different cases of the disease. The dose is 180 c.c. Good results have been reported. (*c*) Bisulphite of soda, in doses of three to ten drops of a saturated aqueous solution, every two hours during the day. According to Dr. Edgar Holden, who suggested this treatment, no complications ever develop if it is used. (*d*) Urotropin. Middowitz had no case of nephritis among 102 cases since he began the use of urotropin in doses of $1\frac{1}{2}$-$7\frac{1}{2}$ grs. three times a day as a preventive. He gives it during the first three days of the attack and the first three days of the third week. (*e*) A naso-pharyngeal spray should be used to prevent complications leading to deafness, viz. a spray of menthol in benzoinol, gr. iv to ʒj, followed by a spray of benzoate of soda, gr. v to distilled water ʒj, and politzerisation if necessary. EDMUND CAUTLEY.

Otology, Laryngology and Rhinology.

Symptoms, sequelæ, and complications of adenoid vegetations ('*Arch. für. Ohrenheilk.*,' *vol.* lxii).—**Fischer** reports the results of careful examination and systematic interrogation of 500 patients suffering from adenoids. The series of questions put to every case presenting itself embraced the following: Was there nasal obstruction? Snoring? Nasal voice? Coryza? Epistaxis? Deterioration of sense of smell? Pavor nocturnus? Discharge from the ear? Earache? Tinnitus? Difficulty of hearing? Sore throat? Propensity to catarrh of the lower air passages? Headache? Anæmia? Enuresis? Aprosexia? Deficient mental development? Both sexes were about equally affected; 246 patients were males, 254 females. The average age was 9·2 years. The most constant symptom (83·8 per cent.) was nasal obstruction, with its direct consequence, mouth-breathing; 77·4 per cent. snored during sleep. Sudden loud cries during sleep with bad dreams and restless nights were observed in 17 per cent. of cases; in several instances they were the immediate cause of seeking medical advice. The question of anosmia could, on account of unreliable answers, only be decided in children older than 10 years; in 26·9 per cent. of these the sense of smell was either diminished or absent altogether. Removal of the adenoids was followed by distinct improvement. Rhinolalia clausa was found in 80·3 per cent. Disposition to acute and chronic catarrh of the air-passages was so common that, with only occasional exceptions, it could be demonstrated on all patients. Aural symptoms were complained of by 66·4 per cent., acute middle-ear disease was found in 3·2 per cent., chronic middle-ear disease in 18·2 per cent., acute purulent middle-ear disease was present in seven patients, chronic discharge in 32 patients. The causal relationship was proved by the rapid improvement following adenotomy. Repeated attacks of epistaxis were present in 53 patients, in 21 of whom the result of the operation could be followed up—15 had no more attacks; in 3 they diminished in frequency; only 3 showed no improvement. Nocturnal enuresis was complained of by 106 cases; 71 of these were kept under observation after the operation, 66 of these were cured. Headache was present in 44·2 per cent., anæmia in 34·2 per cent. of cases. Aprosexia, found in 35·8 per cent., was in most cases accompanied by nasal obstruction; 18 patients were stammerers, 3 suffered from difficulty of pronounciation. Improvement was only observed in a few cases; where the child is mentally deficient and has suffered for some time from this complication much hope for improvement cannot be held out to the patient's parents.

D. O'C. Finigan.

Surgery.

Malignant intestinal tumours in children (*Thesis, Paris*, 1904).—**Reboul.**—An abdominal tumour forms with swelling of the abdomen, alternating diarrhœa and constipation, pain, rapid loss of flesh, slight elevation of temperature. The prognosis is serious, as cases are usually fatal in three months, though seldom from peritonitis; obstruction is not as common as in adults. An early and radical removal of the affected intestine with the corresponding mesentery may result in complete cure.

T. P. Beddoes.

Review of Book.

The Johns Hopkins Hospital Reports, vol. xii, 1904. (Johns Hopkins Press, Baltimore).

This volume carries on the high traditions that its predecessors so rapidly established. It contains eight articles, all characterised by the thoroughness and courageous attack upon detail that we are accustomed to see only in German publications. The relation of the work recorded to the subject of children's diseases is nowhere a direct one, but much of it is of equal interest to the pediatrist and general physician. J. Morris Slemons has investigated some points in the metabolism of nine mothers before and after labour. He shows, by repeated analyses of the intake and output, that there is a storing up of nitrogen and water during pregnancy, with a relative increase in the nitrogen eliminated as ammonia; these points are accentuated by the presence of twins, and cease on the recurrence of intra-uterine death of the fœtus. After labour diuresis takes place, and for two weeks there is an increase in the water, and especially in the nitrogen excreted; this last is attributed to the waste products due to the involution of the uterus.

The most extensive researches are those published by Joseph Erlanger on the subject of "Blood-Pressure in Man." He has first a monograph of 57 pages on the technique of the methods of study, and here describes a new instrument for the determination of the maximum and minimum blood-pressures in man., Then follows a monograph by the same author in association with Donald R. Hooker, which, in 232 pages, contains the records of an enormous mass of work, together with a complete exposition of the views that have been held on the different points raised. Amongst the conclusions reached may be mentioned the following: When a healthy individual changes from the recumbent to the erect posture there occurs a rise in the minimum blood-pressure, but no change in the maximum, an increase in the pulse-rate, and a diminution of the pulse-pressure. These changes are due to the combined action of muscular exertion and accumulation of blood in the dependent parts of the body; this latter factor is compensated by an increase in the energy of the heart and in the peripheral resistance. The velocity of blood-flow does not seem to be altered in the splanchnic area or anywhere in the body, except that it is probably increased in the cerebral vessels. When the standing body is immersed in tepid water, and the legs encased in Crile's pneumatic suit, circulatory conditions are produced identical with those that obtain in the recumbent posture. The effects of different grades of exercise, of the ingestion of meals, and of different postures are then discussed. The output of urine varies, as a rule, directly with the pulse-pressure, and hence is diminished in the erect posture; in this posture the output of chlorides, but especially of phosphates and nitrogen, in the urine is diminished. In orthostatic albuminuria the output of albumin is invariably in inverse relation with the magnitude of the pulse-pressure, and thus usually with the amount of urine excreted as well. No relation can be established between these urinary changes (in health or disease), and either the blood-pressure or the velocity of blood-flow in the aorta, or even the kidneys. These changes are qualitatively the same in orthostatic albuminuria and in health; slight quantitative differences are, however, to be noted. Thus the diminution in urinary solids in the erect posture is greater in the case of the albuminuric, but the rise in the minimum blood-pressure is less than in the normal, subject. The pulse-pressure of the albuminuric is smaller than that of the normal subject, and he exhibits a greater amount of vaso-motor instability, as evidenced by syncopal attacks. A complete discussion of the various views relating to renal secretion is given, the authors inclining towards Heidenhain's, but emphasising the importance of pulse-pressure in this connection.

Rufus I. Cole has an article on "Typhoid Meningitis," and W. G. MacCallum on the "Pathological Anatomy of Meningitis due to Bacillus Typhosus." Cole deals more especially with the clinical aspect of this affection and appends an exhaustive account of the literature on the subject. The cases are divided into three groups: (1) Meningism—intense meningeal symptoms with no lesions found in the membranes; (2) serous meningitis—meningeal symptoms with demonstrable non-suppurative lesions; (3) purulent meningitis. The first group will probably fuse with the second with more careful researches. Incidentally we may remark that the origin of the term "meningism" is incorrectly referred to a publication of Dupré's in 1900; Dupré used the term in 1894 and the significance of the condition was in the next few years the cause of much controversy in France. The second group of cases is considered to be far the largest; an account is given of eight cases taken from the literature, together with five new ones. Clinically the writer makes it clear that there is no symptom or group of symptoms diagnostic of meningitis; even such a sign as optic neuritis occurs in typhoid fever apart from any meningeal lesion and has never been recorded in the common form of typhoid meningitis. The occurrence of convulsions is highly suggestive, but only occurred in four of the thirteen cases. Leucocytosis never appeared with the onset of the meningeal symptoms, a fact which suggests the purity of the infection. Lumbar puncture was done in eight cases; in all the fluid was quite clear and contained only a few leucocytes, but bacilli were demonstrated every time. Death occurred in twelve of the thirteen cases, but was due to complications in five cases, three of which were in convalescence. The writer has only one case of suppurative meningitis to add to the literature. There is nothing in the symptoms of the recorded cases which separate the condition from serous meningitis. In MacCallum's paper a detailed account is given of the autopsy in one of these cases. A peculiar condition of the arteries was found in which the endothelium was separated from the tunica media by masses of polymorphonuclear cells, said to be derived from the vasa vasorum, to such an extent as in many instances to occlude the vessel completely. A full description of the cells found in the exudate is given. The most striking feature of these was the presence in high numbers of very large actively phagocytic hyaline mononuclear cells, whose protoplasm showed finely stippled oxyphilic material which was not grouped into granulations. The writer discusses the origin of these cells and thinks it most probable that they are derived from wandering cells, perhaps of Marchand's adventitial variety.

Theodore F. Riggs gives the results of his measurements of 1500 pelves and children's heads, a study undertaken to compare the negro and white races in the matter of labour. He finds that contracted pelvis occurs in negresses nearly four times as often as in Europeans. Labour in women with normal pelves is two hours shorter in the black race than in the white. The disproportion in the sexes of children born is not so great in the black race. There is a higher percentage of spontaneous labours amongst the negresses, and a higher percentage of vertex presentations. The white child is 1½ cm. larger than the black child and weighs 200 grammes more.

George Walker reviews the whole subject of renal tuberculosis, having analysed 373 cases from the literature and 79 personally observed. The affection occurs in a quarter of all autopsies on patients dying of tuberculosis; in children under 4 years renal tuberculosis is found in a half of such patients. Other parts of the genito-urinary system are affected in only a sixth of the cases of renal tuberculosis. Invasion of the kidney takes place principally by means of the blood-current (in over 90 per cent. of all cases), occasionally by extension from neighbouring structures, notably the vertebræ, and only very rarely by extension upwards from the bladder, etc. In the majority of instances the bacilli beyond doubt lodge first in the glomeruli. The lesions produced may be grouped into—(1) miliary tuberculosis, (2) chronic tuberculosis with ureter patent, (3) chronic tuberculosis with ureter blocked; in this last instance a low degree of hydronephrosis appears, and the tubercular process progresses very rapidly. Although the bladder appears comparatively resistant to actual infection, vesical symptoms are present in over 90 per cent. of the kidney cases; hyperæmia of the bladder mucous membrane, due to cystitis caused by the toxins secreted, is nearly always seen, and probably accounts for the symptoms. Since Babes in 1883 first demonstrated tubercle bacilli in the urine, examination of that excretion for bacilli has become a routine proceeding. In most of the reported cases bacilli have not been found. The writer asserts that bacilli appear very early, and are constantly present, the failure to find them being due to imperfect technique. The affection is slightly commoner in females, and is seen most often between 20 and 30 years; one kidney, most often the right, is first affected, usually two years before the other. The local manifestations are, in order of frequency, polyuria, which is the initial change, presence of abnormal constituents in the urine (pus, blood, *débris*), troubles of micturition, renal pain, hæmaturia, and tumour mass. A swelling is usually felt by the end of the fifth month, more often in children than in adults. An account is given of cystoscopy and ureteral catheterisation, the objections to the latter being dismissed. As regards treatment it is laid down that an early nephrectomy should be done in every instance, as the disease invariably destroys the organ if not interfered with, whilst healing of a tuberculous mass in a kidney is one of the rarities of medicine. At all stages of the disease, if operative treatment is to be considered, nephrectomy is indicated, though a preliminary nephrotomy is necessary when there is either extensive disease or suppuration. Disease elsewhere is no contra-indication to the operation; indeed, vesical tuberculosis often improves strikingly after nephrectomy. The technique of the operation is discussed, and a new method suggested. This consists in tying the vessels through an abdominal incision so as to prevent the escape of infective material during the subsequent manipulation of the kidney, and then removing the kidney by the usual lumbar route. Statistics of the operative results are quoted in full.

In conclusion, we have to say that the arrangement of the volume and the printing of its many diagrams are in every way excellent.

A. Ernest Jones.

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Original Articles.

CONGENITAL UMBILICAL HERNIA.

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A congenital umbilical hernia is a tumour of variable size, containing one or several abdominal viscera, seated at the umbilicus, and existing in children at the time of birth. Of the peri-umbilical hernia I shall have nothing to say, because the congenital type only arises through the umbilical ring, while the peri-umbilical form only occurs in the adult. Congenital umbilical hernia does not always have the same origin; some contain viscera which have never been enclosed within the abdominal cavity, while in other cases the viscera forming the contents, after having been seated normally within the abdomen, protrude during the last few months of intra-uterine life or during labour. The former are not hernias, properly speaking, because the word "hernia" means the exit from the abdominal cavity, and what has never been contained therein can naturally never come out, consequently it is rather more of a congenital malformation and not a hernia, properly speaking.

Gosselin, in his 'Leçons sur les Hernies Abdominales,' published in 1865, divided umbilical hernia into three types as follows: (1) very large hernia containing the liver and the larger part of the intestine, with absence of a considerable portion of the abdominal wall; (2) hernia of medium size seated at the base of the cord and having for contents the liver and intestine, or the liver or the intestine alone, but which cannot be reduced; (3) hernia the size of a small nut to that of a crab-apple, round and transparent, situated at the base of the cord, and reducible. This classification appears to me somewhat arbitrary, and would be better designated as embryonal hernia, which corresponds to Gosselin's first group, and fœtal hernia which develop after the completion of the third month of intra-uterine life. In the embryonal umbilical hernia three varieties may be distinguished. The first, which may be termed umbilical eventration, is characterised by an arrest of development of the abdominal walls, or a defect in the union of the walls. Such cases present large irreducible hernias, with the viscera sometimes only covered by a thin membrane in direct continuation with the envelopes of the cord, while at other times they are free in the amniotic fluid. The defective union of the abdominal wall may be more or less extensive. This first variety of hernia consequently offers most variable sizes, according to the extent of the arrest of development, as well as to the extent of the lack in union of the walls.

The contents vary from a single intestinal coil to nearly the entire intestine, with its adnexa. The heart has occasionally been found as part of the contents; the liver is almost always present, and it may alone form the tumour. And this leads me to remark that the umbilical vein, by going into the longitudinal hepatic fissure, forms a cord which fixes the organ to the ring and explains the formation of this hernial contents. The membrane forming the sac, which may rupture during intra-uterine life, is, I believe, generally considered as a prolongation of Rathke's primary membrane or the membrana reuniens.

The adhesions uniting the sac to the viscera appear generally due to agglutination, and do not appear to be of an inflammatory nature.

The second variety is the diverticular umbilical hernia due to the persistency of the vitello-intestinal duct, which opens into the intestine by an orifice commonly termed the intestinal umbilicus. Obliteration of this orifice commences after birth and is complete from the thirty-fifth to the fortieth day, while the vitello-intestinal duct becomes atrophied and detached from the intestine at about the tenth week. In those cases where this duct persists it may lead to the formation of a diverticular hernia, but it is most infrequent for the diverticulum alone to form the hernia, so that under these circumstances it usually passes by unnoticed. It is consequently probable that occasionally it s included in the ligature of the cord and gives rise to intestinal fistula. It may, however, happen that the obliteration, which commences at its intra-abdominal end, has taken place, and then a small fistulous tract results, ending in a *cul de sac*, instead of the formation of an abdominal anus. It has been pointed out by Duplay that a diverticular hernia is occasionally present simultaneously with a stricture or complete occlusion of the intestine, and, under these circumstances, if the point of occlusion is situated below the entrance of the diverticulum, a thickening of the cord is met with, while gurgling is produced upon pressure of the cord at its base, associated with symptoms of strangulation. These diverticulæ vary in calibre, while their length may be from five to ten centimetres, or even more.

In those cases where they develop into a hernia a hernial sac is wanting, and the diverticulum is adherent to the base of the cord, or at the internal aspect of the amniotic prolongation, thus rendering the rupture irreducible. It is most unusual for the diverticulum to alone form the entire tumour, and cases of this type reported in literature are few in number; usually it is accompanied by the presence of intestinal coils.

The third variety of embryonal hernia may be termed "hernia of the vitellin loop." It is characterised by the presence of the intestinal loop united to the vitello-intestinal duct at the base of the cord, and which, instead of little by little entering into the abdominal cavity, has remained adherent to the umbilicus. The remains of the vitello-intestinal duct may be found on this loop of intestine.

There now comes up for our consideration the congenital umbilical hernia, which develops after the formation of the umbilicus, during the fœtal period, and which have been called fœtal hernia in opposition to embryonal hernia. Here one is dealing with a true hernia, because the viscera make their exit from the abdominal cavity by way of the umbilicus, resulting in the formation of a sac lined with peritoneum. The size of these hernias is extremely variable, from that of a walnut to the size of a fœtal head at term. The contents may consist of the large or small intestine, or both, as well as the liver, etc.

In very large hernias it rarely happens that the fœtus is born with the hernial coverings intact, because they are usually ruptured during labour, or even pregnancy, so that the intestine floats freely in the amniotic fluid. Two membranes may be distinguished over the portion of the dilated cord, namely, an external and an internal membrane, the nature of which I shall discuss when speaking of the etiology. The external integument is formed by the dilating umbilical cord and is represented by the amniotic membrane, which on the one hand joins the skin of the abdomen and on the other continues directly on to the cord, forming its sheath. The internal lining of the sac represents the hernial sac, properly speaking. Both membranes are united to each other by a layer of connective tissue, which frequently takes on a gelatinous structure, similar to that bearing Wharton's name. Occasionally there are other intermediary layers, although in a varying degree of development, such as the abdominal fascia or muscles.

In the larger number of cases the sac is transparent, so that one can see through its walls and observe the coils of intestine and the meconium that they contain. In those cases which have not ended in death this transparency becomes gradually attenuated, and ends by disappearing.

The union of the sheath of the cord with the abdominal skin usually offers a distinct line of demarcation, but occasionally it may be irregularly indented; that is to say, that at certain points the skin sends out prolongations on the sheath of the cord. Sometimes quite a large reddish fold will be noticed at the junction of the skin with the amniotic membrane, as was pointed out some years ago by Parmenter. Ahlfeld believes that the distinct limits are more frequently met with while the indented border is rarer and accompanies a vesical fissure. He injected a fœtus by the aorta and found that the red colouring extended as far as the border, but not into the envelopes of the hernia, and there was not the slightest trace of capillary injection. Generally speaking, the two umbilical arteries are situated outwardly and below, while the vein is usually found above. It not infrequently happens that they may be distinguished through the transparent covering of the hernia. They may occasionally entwine the tumour. Then again, the two arteries may be found thrown to the side, while in others they may vary as to their number. Ahlfeld, after having examined eight cords in cases of funicular hernia, found only one artery and one vein in five, while in the three others there were two arteries and one vein, while Otto, who examined eight cords, found one artery four times and seven times two veins. Arteries and vein quite frequently become united at the apex of the tumour forming the cord, but the insertion of the cord does not always take place at the apex of the tumour. Usually the cord occupies one of the sides, and, according to Cruveilhier, the insertion is found more frequently on the left. It often happens that in these cases the elements of the cord, arteries, and vein are thrown to the same side, instead of being disassociated. In cases of irreducible hernia the insertion preferably takes place at the apex of the tumour. In forty-five cases where the point of insertion of the cord was given Buschan found the following: thirteen times in the middle of the tumour, once on the right of the tumour, and twice on the left, on the anterior aspect of the tumour once, and on its lower aspect twenty-eight times. This same authority makes the remark that the cord is usually very short, and Otto has described a case where it was completely wanting, while the hernial sac was directly adherent to the placenta. A similar case has been described by Thorner.

The viscera contained in the sac vary greatly, but, as I have pointed out, usually a coil of intestine, the liver, or the stomach are to be found, the liver alone quite frequently. Then, again, all the organs belonging to the digestive apparatus may form the contents of these hernias. Chadwick has described several instances in which the heart and stomach formed part of the contents, while Masurel has reported an instance of hernia in a child who lived ninety-five hours, which had as contents the omentum, the intestine from the duodenum to the sigmoid flexure and also a kidney which had no ureter. The liver, spleen, bladder, and kidneys were normal, and he supposes that the organ which was found in the hernial sac was a supplementary kidney.

The smaller hernias usually only contain some coils of small intestine, and occasionally, as has already been pointed out, the contents may be represented by an intestinal diverticulum alone. In twenty-three cases Kraemer found the following organs in the hernial sac: intestines twenty-three times, liver twenty-two times, stomach ten times, spleen five times, and the heart twice. Thus it will be seen that out of these twenty-three cases the liver was found only once less than the intestine, and the above-mentioned authority is of the opinion that this proportion is below the real truth. He even believes that, generally speaking, one is authorised to admit that in the majority of cases where the presence of the liver was absent in the hernia, it nevertheless formed part of the contents. Lindfors collected sixty-five cases of funicular hernia which were submitted to treatment and has given the following figures relative to the contents: Liver eight times, liver and intestines five times, liver and omentum twice, the cæcum twice, while the stomach, omentum, intestinal coils, and transverse colon were each met with once. In one case the larger part of the abdominal viscera were present, while in another the contents consisted of the heart, stomach, and intestinal coils. In forty-five other cases coils of intestine were alone mentioned as forming the contents, or, on the other hand, the latter were not indicated.

Very frequently congenital umbilical hernia is accompanied with other congenital malformation, so much so that Hertzfeld found twelve out of sixteen instances presenting the following defects: In four there was a fissure of the palate, in five fissure of the bladder, in three a pubic fissure, four spina bifida, and in one a cerebral hernia. Besides these, one may meet with malformation of the genital organs, deformities of the bones, contracture of the joints, malformation of the feet and hands, and cyphotic or scoliotic changes in the vertebral column.

According to Lindfors, out of a total of nineteen instances of congenital umbilical hernia, nine were abortions, and out of these there were three which presented no other congenital malformation. The remaining six presented malformations of the genital organs.

Malposition of the viscera is frequent in congenital umbilical hernia; the stomach and spleen often are situated lower than normally, while the heart and lungs may be drawn into the hernia if the diaphragm is lowered.

The viscera are frequently hypertrophied, but usually it is the liver which is partially enlarged, or in entirety, and becomes adapted to the hernial sac, taking on an absolutely abnormal shape. The large umbilical hernia, the vertebral column, frequently becomes curved and, according to Ahlfeld, it is sufficiently marked for the lower part to come in very close proximity to the shoulders; the cyphosis is usually associated with lordosis.

The mesentery may be possessed of a greater length than normally. The increase in size of the viscera may be explained from the fact that the hernia, by allowing the abdominal cavity to empty itself partially of its organs, those which remain within have a tendency to become hypertrophied in order to fill up the space left by those which have made their exit, and are consequently exposed to displacement. The mesentery becomes longer, due to the traction upon it by the intestine contained within the hernia, and it has been upheld that this exaggerated length has been the cause of the hernia, while in reality this would simply appear to be a secondary phenomenon.

I have pointed out that malformations of the genital organs are frequent, consisting principally of a double uterus or vagina, epispadias, a bifid penis or clitoris, etc., accompanied by pubic fissure and extrophy of the bladder. Ahlfeld gives the following explanation.

If the vitellin cord drags the intestine towards the lower part of the abdomen and retains it outside, a diastasis of the lower half of the abdominal wall will result; if the traction continues, the intestine, crowded down towards the symphysis pubis, pushes the allantoid before it, and with it prevents the union of the structures coming from each side, which should unite in the median line. In this way the lower part of the abdomen and the symphysis remain with a fissure and, on account of the latter, those organs situated on each side of the symphysis and which by their union should form the external genital organs, do not meet. The allantoid forms a large bladder, because it is not limited in front by the abdominal walls and remains perfectly free in every direction excepting posteriorly. Since it cannot form an excretory canal below, it becomes filled with urine and finally ruptures, and consequently the anterior wall thus disappears, while the posterior wall alone exists and becomes covered with mucosa. On the other hand, de Quatrefages insists upon the part played by adhesions in explaining the formation of extrophy of the bladder, because the former prevent the closing of the abdomen and the union of the pubic bone. He points out that the internal organs, arrested in their development, will remain outside, while the fissures, which primarily were normal, will persist, and new ones may even form during this process, and the formative force, being overcome by these different causes, will leave various organs incompletely developed, or, on the other hand, will either unite or bind together certain parts which Nature has destined to be separate.

In these cases of congenital umbilical hernia malformations of the intestines, such as absence of the anus or rectum, stricture of some portion of the intestine or its occlusion, have been frequently found. This has been explained as follows. At the commencement of the second month the lower half of the intestine forms a straight line extending from the lower end of the vertebral column to the upper part of the coil. This portion merely undergoes a slight lengthening during the following weeks. The descending part of the large intestine by a slight curve forms the transversal part, which goes out directly by the abdominal cleft. As yet there is no ascending colon, while on the other hand the small intestine increases in length very rapidly. One can thus see that a traction produced by the omphalo-mesenteric canal can only result, as far as the small intestine is concerned, in an exit of other intestinal coils through the abdominal cleft, while the large intestine is exposed for this very reason to many changes, either in its points of attachment or in its lumen. If the traction has occurred at a time when the lower end of the digestive tract is still closed, it happens that from the traction the rectum is so much pulled upon outwardly that its lower end cannot take part in the formation of the anus. If the traction on the rectum continues at a later date, a stricture in its lumen may take place from this same cause, while actual contact of its walls may bring about an obliteration, and thus may be explained the various causes of stenosis of the lower parts of the intestinal canal.

Congenital umbilical hernia is relatively rare; Thusicum believes that it occurs once out of every 2000 births, while, according to Lindfors, it was encountered once out of 5184 in a series of 20,735 births occurring at the maternity hospital of Munich. At the lying-in department of the Charité Hospital at Paris 3043 births occurring between 1886 and 1894 showed no instance of congenital umbilical hernia. The question as to whether or not the sex has any influence on this malformation is a difficult matter to solve, but it may be said that out of the 37 cases collected by Lindfors, there were 22 boys and 15 girls, while Buschan, out of a total of 69 cases, found 43 boys and 26 girls. Children afflicted with very large eventrations are usually born dead at or before term. The cause of death is difficult to ascertain, but German authorities are of the opinion that anæmia of the fœtus is usually the cause, and I have pointed out that quite frequently one of the umbilical arteries is missing, or they may be only slightly developed, and this is the cause of the anæmia.

Embryology teaches us that the blastoderm becomes divided into three layers, from which the various organs of the embryo develop. These three layers are called respectively the external, middle, and internal. The medullary sulcus once formed, the middle layer of the blastoderm becomes divided into two plates, separated from each other by a cavity. These two plates become agglutinated, one with the external layer and the other with the internal layer; the first forms the musculo-cutaneous plate or somatopleure, while the second forms the fibro-intestinal plate or splanchnopleure. After this the primary and unique abdominal sulcus becomes divided into two sulci, the interior of which becomes inlaid in the external one. The internal sulcus is the starting-point of the digestive tract, while the external sulcus gives rise to the thoracic and abdominal wall.

These two sulci soon become transformed into two closed tubes from union of their walls, and consequently the umbilical opening is double, just like the two layers which give rise to it. The closure of the internal layer or splanchnopleure forms the intestinal umbilicus, while the closing of the external layer or somatopleure forms the cutaneous umbilicus.

From the formation of the two umbilici it results that those parts of the splanchnopleure and somatopleure which enter into the formation of the embryo become completely separated from those entering into the composition of the envelopes of the vitelline sac, and, later, from those which enter into the formation of the amnion.

The internal sulcus, the starting-point of the digestive tract, is produced by the folding in of the splanchnopleuræ. The intestinal sulcus forms the middle region of the digestive tract; at its anterior and posterior part it is in communication with the two tubular cavities ending in *culs de sac,* the anterior intestine or pharynx and the posterior intestine or rectum. The anterior intestine develops first, while the posterior only becomes formed much later. The walls of the splanchnopleure consequently are in direct continuation with those of the vitelline sac. This communication progressively decreases in size, so that after a while it only forms a canal or omphalomesenteric duct, and soon its obliteration becomes complete. The canal then becomes the vitelline membrane, and the vitelline sac ceases to be in direct communication with the intestinal cavity. If the omphalomesenteric duct persists, Meckel's diverticulum is formed.

The somatopleure accompanies the splanchnopleure in its development, and forms a tubular pocket. This pocket forms little by little, and finally gives rise to the cutaneous umbilicus, a concentric opening in relation to the intestinal umbilicus. After it has become closed it extends in a sheath which contains the umbilical, vesical, and the placental vessels—in other words, the umbilical cord. After having formed this sheath it again becomes folded near the placenta in order to continue directly with the amnion.

The abdominal wall is, in the first place, formed by two superposed layers—the ectoderm and the somatopleure—and consists in a transparent membrane designated under the name of "membrane unissante inférieure," somatic plate of Hertwig or Rathke's membrane. Later on it becomes completed by the appearance of new elements coming from the somatopleure or the proto-vertebræ.

Having thus summed up briefly the embryology, we will now consider the formation of embryonal hernia. If the borders of the somatopleure do not reach the median line of the embryo on account of arrested development, it happens that the thoraco-abdominal cavity does not close in front, and the viscera which should fill it, such as the heart, liver, spleen, stomach, and intestine, are consequently placed outside of the body. This arrested development, which also arises in the amnion, gives rise to an excessive shortness of the umbilical cord, or it may be completely absent, and, as I shall show later on, this brevity of the cord has been considered as the cause of these malformations, when in reality it is simply the consequence.

In certain cases the cord is completely wanting, and Geoffroy Saint-Hillaire thought that adhesions played a considerable part in the formation of monsters, inasmuch as the adhesions which united the embryo to the placenta prevented the closing of the thoraco-abdominal wall. These adhesions are produced by the effect of contact of the viscera belonging in the thorax and abdomen, with the placenta. If the somatopleure only becomes united above the umbilicus, the thoracic wall will be formed, while the abdominal wall will be wanting; the celosomia is consequently only abdominal; if the fold only forms below the umbilicus, the thoracic wall will be wanting more or less, a condition which is met with in certain cases of cardiac ectopia.

The cutaneous umbilicus may consequently remain widely open when there is an arrest in development. It not infrequently happens that the somatopleure becomes completely formed, but retains its primary characters of a transparent membrane on account of a defective formation of either the cutaneous, muscular, or bony elements. In this case the viscera are contained at the base of the cord, being covered by the membrana reuniens. This absence of permanent elements added to the primary abdominal wall is, generally speaking, only partial.

Another cause of embryonal hernia is a defective regression of the omphalomesenteric duct. At the commencement of the fourth week, the intestinal tube, which, up to that time, represents a nearly straight line, and still in communication with the umbilical vesicle by a wide canal, commences to form its first loop. The median part of the intestine, where the omphalo-mesenteric duct is inserted, becomes placed outside of the abdominal sulcus at the time this loop forms, and the lower part passes above the upper, so that the cæcum becomes formed from the upper branch of this loop. On account of the increase in length of the intestine at both ends, the tube elongates rapidly, so that at about the eighth week five or six loops will be found situated outside of the abdominal cleft. Then at the level of the fœtal end of the umbilical cord appears a swelling destined to contain the intestinal loops situated within it and outside of the abdominal cleft, which at this time is undergoing closing. This swelling disappears as soon as the intestine enters within the abdominal cavity at the beginning of the third month.

(*To be continued.*)

ON SOME OF THE DISEASES AND INJURIES OF THE EYE PECULIAR TO CHILDREN.*

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(*Continued from page* 457.)

Deformities of the Skull and Defects in Sight.

There are three malformations of the skull that are apt to be accompanied by defective sight, viz., (1) microcephaly; (2) hydrocephaly; and (3) oxycephaly.

(1) *Microcephaly.*—Abnormal smallness of the cranium is usually a congenital defect in the sense that a baby enters the world with a skull the capacity of which is smaller than normal, while its frontal portion is flat and receding. It used to be thought to be due to premature synostosis of the cartilage between the basi-sphenoid and the basi-occipital bones, but of late years considerable doubt has been cast upon that view. The children are commonly idiotic, and they present the conditions often associated with mental deficiency, such as a vacant expression, deafness, and backwardness in walking and talking. The condition is apt to be reproduced in other members of the family.

It is not uncommon for a microcephalic infant at the age of six or eight months to be brought with the statement that he cannot see. This idea is sometimes well founded, and in that event examination of the fundus allows one to distinguish between two groups of cases: (*a*) the fundus appears to be healthy, and the defective sight to be merely a part of the general deficiency from which the child suffers, and (*b*) the fundus is found to include areas and patches of choroiditis, having no particular shape and occupying no particular position. The existence of the last-named class (*b*) has been noted by Mr. E. Nettleship ('Royal London Ophthalmic Hospital Reports,' vol. xi, p. 356), who in 1887 reported four cases of the kind. Mr. Nettleship thought that there was no evidence of syphilis, a view with which I am in accord. Personally, I have never been able to convince myself that the choroidal changes, which are probably of intra-uterine origin, have anything to do with the blindness, which I consider is amply accounted for by the mental condition of these children. In other words, in this class of case I am inclined to regard the fundus changes as merely coincidental.

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* A lecture delivered on July the 11th, 1905, in the post-graduate course of ophthalmology in the University of Oxford.

(2) *Hydrocephaly.*—The pathogeny of defective sight or actual blindness not seldom met with in cases of chronic internal hydrocephalus is, of course, well understood. It was known to the older writers under the name of "hydrocephalic amaurosis." It is due to simple optic atrophy, resulting from the pressure of the distended third ventricle upon the optic tracts and chiasma at the base of the brain. The following is a typical case:

(10) Jessie S—, aged 3 years, seen at the Evelina Hospital on January the 18th, 1904, suffering from hydrocephalus, stated to have commenced at 15 months of age. Circumference of head, 23½ inches. Child quite blind, taking no notice of the flash of a mirror and not flinching when the finger was thrust forwards towards the eyes. Retinal vessels of good size. Both optic discs showed a large pallid cup, and surrounding this the papilla was of a greyish-white colour. No squint.

The optic atrophy may be incomplete, and, as in the case to be next quoted, associated with paresis of an ocular muscle:

(11) Beatrice P—, aged 1 year and 7 months, seen at the Evelina Hospital on March the 16th, 1900. According to the history there had been a squint and the head had been getting bigger for six months. No convulsions. "Water on the brain" had been diagnosed by my colleague, Dr. Soltau Fenwick. Child almost but not quite blind. Abduction of eyeballs most imperfectly carried out, and a convergent squint present. Both optic discs were greyish, particularly as regards the inner side.

I have myself once only seen optic atrophy in hydrocephalus preceded by optic papillitis:

(12) Daniel D—, aged 1 year and 9 months, seen at the North-Eastern Hospital on March the 11th, 1896, suffering from a rather marked degree of hydrocephalus. There were central choroidal changes in each fundus, especially in that of the left eye. The optic discs were swollen, hazy, and of whitish-grey colour. The discs afterwards became quite pallid, so that from mere inspection it would have been impossible to distinguish them from a condition of so-called simple atrophy.

Depression of the eyes and nystagmus are common features in extreme cases of hydrocephalus.

(3) *Oxycephaly.*—This curious deformity (known in France as *crane en forme de tour* and in Germany as *Turmschädel*) is characterised by abnormal height of the anterior portion of the skull, so that the frontal region is capped by a bony prominence and assumes a steeple-like form. Hence the name "tower skull." Virchow's view was that the deformity was due to premature ossification of the sutures between the parietal bones and the occipital and temporal bones, resulting in a kind of compensatory development involving the

anterior portion of the cranium. The condition, as a rule, is congenital. In my experience, extreme instances of the deformity are exceedingly uncommon. Although the patient may be mentally defective, yet he is usually intelligent, probably because the brain accommodates itself to the changes in the contour of the cranium. Owing to the shallowness of the orbits, the eyes become very prominent; so much so indeed that they may be partially extruded from the orbit by slight digital pressure. Donaldson (3) has related a case where exophthalmos was so pronounced that on several occasions one eye became partially dislocated and had to be replaced by the patient's father. The accompanying illustrations (taken from a recent communication by Professor Uhthoff [9]) represent a weak-minded lad, aged 15 years, the subject of oxycephaly, whose right eye was so exceedingly prominent that it could by slight pressure be dislocated in front of the eyelids. Divergent squint and nystagmus are common in these cases, and paralysis of ocular muscles is not unknown. But their chief ophthalmological interest centres around the fact that a certain number of the patients are more or less blind, in consequence of optic atrophy, of post-neuritic type, beginning in comparatively early life. It is significant that in the three examinations after death of patients who suffered during life from oxycephaly and papillitis constriction of the nerve in the optic foramen was found (Enslin). At the same time, it has been suggested that the papillitis may result from augmentation of the intra-cranial pressure or from meningitis. Another school teaches that the deformity of the skull and the inflammation of the optic nerve result from a

Fig. 3.

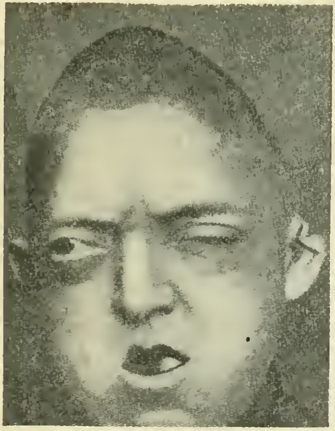
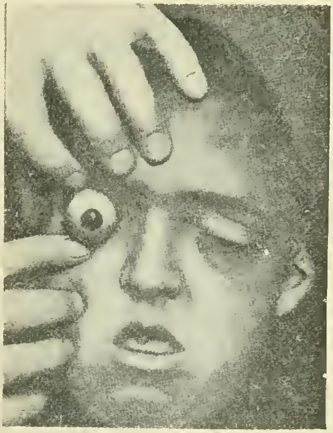
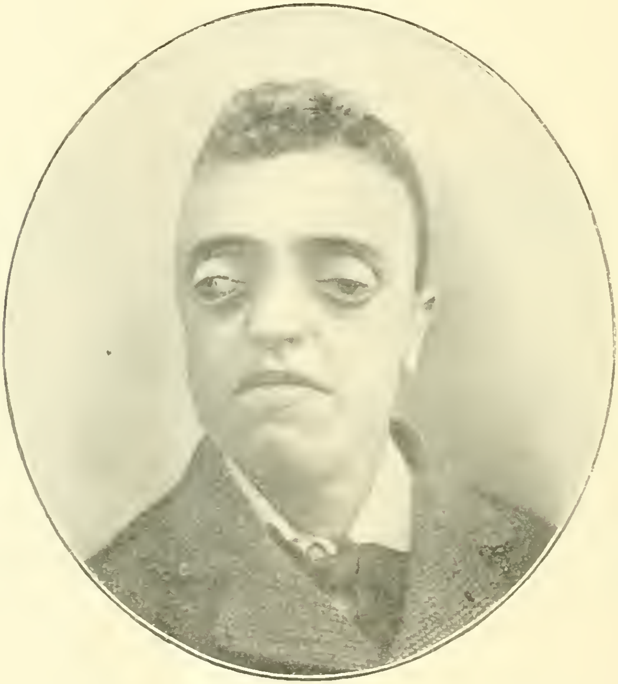


Fig. 4.



common cause, the nature of which is at present unknown. Oxycephaly may affect more than one member of the same family, as in cases described by George Carpenter (1) and Velhagen (6). Carpenter's cases were in two sisters, aged about 2 and 4 years respectively, who, in addition to marked oxycephaly, presented a perfect arsenal of associated defects. Indeed, the condition often co-exists with other stigmata of degeneration, such as hallux varus, genu valgum, highly arched palate, polydactilism, webbed fingers and toes, meningocele, hernia, deformities of the ear, and so forth.

FIG. 5.

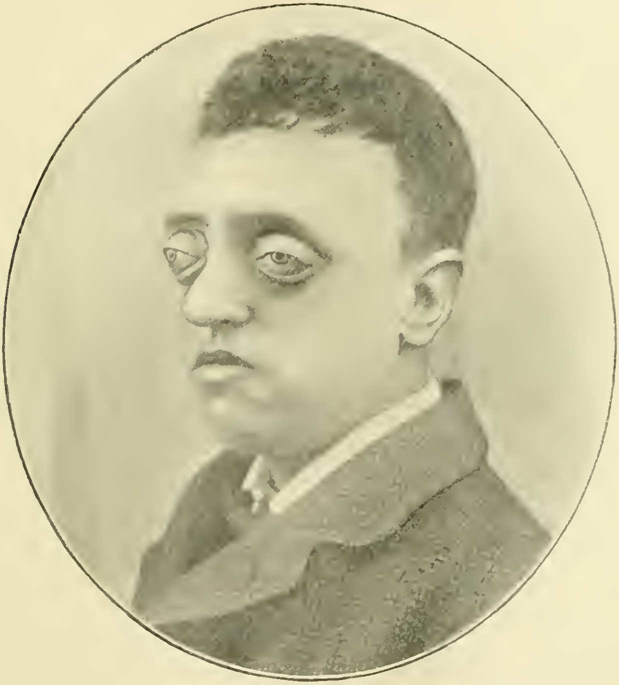


The following case of oxycephaly fell under my notice recently:

(13) Albert R, aged 17 years, examined April the 11th, 1904. The lad, although he had never attended school, had nevertheless managed to teach himself how to read. He spoke well, and was distinctly intelligent. He was not deaf. His height was 4 ft. 11½ in., and his weight 5 st. 7 lb. 8 oz. A general examination disclosed the existence of the following defects or malformations, viz. a highly arched palate, alar scapulæ, deep post-anal dimple, and a trace of flat-foot. The lad's head was small and of the oxycephalic type (*see* photographs). The high, keel-like forehead terminated in a definite osseous lump situated at the junction of the coronal and sagittal sutures

—*i. e.* at the site of the anterior fontanelle. Measurements of the skull were as under: (*a*) Horizontal circumference, 49 cm.; (*b*) over vertex, from ear to ear, 31 cm.; (*c*) arc from root of nose to occipital protuberance, 35 cm.; (*d*) orbital height 4 cm.; and (*e*) orbital width, 5·5 cm. The nose was deflected strongly towards the right. The eyeballs were very prominent, but on an effort being made, could still be covered by the lids. The prominence of the eyeballs was such that the corneæ projected beyond a straight edge applied to the supra-orbital ridge above and to the junction of the malar and superior maxillary bone below. There was no pulsation, and the eyeballs could not be pushed back into the orbits. The finger could be readily passed above between the globe and the roof of the orbit and be passed back some distance beyond the equator of the globe, which under those circumstances became pushed markedly forwards. The left eyeball was divergent. There was no obvious nystagmus. R. V. = $\frac{6}{60}$. L. V. = < $\frac{6}{60}$. Mixed astigmatism in each eye. R. E. the optic disc was greyish-white, with opaque nerve-fibres at its upper and lower border. It was oval down and out, and its vessels were markedly irregular in position and distribution. L. E. pronounced post-neuritic atrophy. The vessels, which were of good size, were bundled together upon the inner third of the disc, where they formed a contorted and convoluted mass. The left disc was much whiter than that of the other eye. It is to be noted that although coarse nystagmus did not exist, yet during ophthalmoscopic examination the eyes manifested slight swaying movements.

Fig. 6.



The family history of Albert R— was instructive. In addition to two miscarriages, there had been five children, of whom three, including the patient, survived. Albert was the first-born. Next came a baby girl, who died at 15 months from convulsions. Her head was deformed, and her eyes became prominent two months after birth. Two boys, both still living, came next, but they showed no deformities. Finally, a girl, who died from "convulsions and teething" at 6 months, and who was not deformed in any way, was born. The mother of the patient was examined, and found to have shallow orbits, retreating forehead, and prominent eyes.

Recent References to Oxycephaly.

1. Carpenter, George.—'Reports of the Society for the Study of Disease in Children,' vol. i (1901), p. 110.
2. Dodd and McMullen.—'Lancet,' June 13th, 1903.
3. Donaldson.—'Trans. Ophthal. Society,' vol. xxiii (1903), p. 264.
4. Enslin.—Graefe's 'Archiv f. Ophthal.,' April, 1904.
5. Tucker.—'Lancet,' July 9th, 1904.
6. Velhagen.—'Münch. med. Wochenschrift,' August 2nd, 1904.
7. Morax and Patry.—'Annales d'Oculistique,' August, 1904.
8. Taylor, James.—'Reports of the Society for the Study of Disease in Children,' vol iv (1904), p. 176.
9. Uhthoff.—'Klin. Monatsbl. f. Augenheilkunde,' January, 1905.
10. Patry, A.—'Thèse de Paris,' 1905.

Nystagmus in Children.

In children, as in grown-up persons, the curious involuntary oscillations of the eyeball known as nystagmus may be due to very different causes. In childhood these include any factor capable of interfering with the development of the faculty of sight and of fixation, such as ophthalmia neonatorum, congenital cataract, corneal opacities, very high myopia, or choroido-retinitis, due to syphilis or other disease.

I desire, however, more particularly to discuss three causes of nystagmus that collectively are commoner in children than all the other causes put together. These are: (1) Gyrospasm; (2) Partial albinism; and (3) Post-meningitic or hydrocephalic nystagmus.

(1) *Gyrospasm.*—It is not uncommon to have a baby brought on account of the more or less recent development of quivering, or rolling, or twitching, or "twittering" movements of the eyes. The history of the case, together with the peculiarities of the nystagmus, cannot fail to strike an attentive observer. As regards the nystagmus, the condition is often unilateral, or it is more pronounced in one eye than in the other. If both eyes are affected, one eye may move up and down and the other in and out, whereas in the common run of cases, due to other causes, nystagmus is bilateral, and occurs in a definite direction in both eyes, so that they retain their relative parallelism. In another very peculiar form, which has been named by Dr. John Thomson "convergent nystagmus" ('British Medical

Journal,' March 30th, 1901), the eyes become convergent in successive jerks, and then become divergent in the same sort of way. The nystagmus may be associated with or replaced by a marked retraction of the upper eyelids, giving the face a peculiar staring appearance that once seen is not readily forgotten.

(14) Richard H—, aged 16 months, seen in February, 1896. He was affected with lateral nystagmus, occasional convergence of the right eye, and marked retraction of each upper lid, varying in extent during the time the child remained under observation. Optic disc, retinal vessels, and fundus generally normal. Slight rickets was present.

In these children you will often notice jerking, rolling, or nodding movements of the head, although it is well to remember that nystagmus may precede the latter by several days or even weeks.

(15) Florence M—, aged 8 months, brought on February the 24th, 1897, because the right eye had begun to "twitch" five days previously. She had always been a "nervous" child, frightened of falling, and startled by a sudden noise. Mother and father stated to be "shocking nervous." No history of fits, chorea, or mental derangement in the family. Fifth child. Breast-fed exclusively. Upon examination, lateral nystagmus, much more marked in right eye. No hippus. No movements of head. Fundi normal. Baby notices light. March the 10th, 1897: During the last week baby has been observed two or three times a day to nod her head and to move it from side to side. She is less nervous, and the eye movements are not so pronounced as they were. March the 24th, 1897: Eyes distinctly better, but movements of head more marked.

Even under those circumstances, the recent onset, the peculiarities of the nystagmus, and the age of the child (usually from 6 to 18 months) should warn you that you are dealing with an instance of what is called "gyrospasm," "head nodding," or "spasmus nutans." These children show signs of rickets (often slight), and it may be surmised with a fair show of reason that the associated intestinal derangement generates poisonous substances, which, absorbed by the blood, are enough to throw out of gear, as it were, the recently-acquired and presumably still feeble movements of co-ordination. Not the least curious point about this curious neurosis of co-ordination is that cases are commoner in winter than at other seasons of the year, a fact supposed to be in some way connected with the absence of sunshine.* This observation had led to an analogy between gyrospasm, on the one hand, and miners' nystagmus, on the other. It is doubtful how far the disease is connected with dentition. The subjects of spasmus nutans are often unusually intelligent and very good tempered, although they are apt to be startled by any sudden noise. Temporary lapses into unconsciousness may be present, as in the case to be next related:

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* Schapringer agrees with Raudnitz in thinking that the main cause of the nystagmus is to be found in keeping babies in comparatively dark rooms in which there are one or several spots of bright light, the fixing of which exhausts the retina ('Centralbl. für prak. Augen.,' August, 1905).

(16) Beny S—, aged 9 months, seen at the Evelina Hospital on November the 29th, 1901. Child never well. At 7 months pneumonia and bronchitis. Always more or less "convulsed." Breast-fed. Eyes said to have "wobbled" since he was born. Child notices sometimes, but not at others, when he is stated to "look vacant.' Upon examination, lateral nystagmus. Pupils equal and active. Child "snuffles" vigorously. He follows a bright object held before his eyes imperfectly. For the last six weeks his head has been rolling from side to side. Fundus reflex good, and no changes can be made out in the optic discs or central region. Child starts and screams at sudden noises.

There is often a history of gyrospasm in the baby's brothers or sisters. The following is an excellent example of this point:

17) William B—, aged 2 years, seen on February the 13th, 1901, on account of an ulcer of the left cornea. The child could neither walk nor talk. Cranial bosses. No facial irritability (Chorstek's sign). When five weeks old the child had developed lateral movements of the head and eyes. The former passed away, but horizontal nystagmus still exists. Rickets. There had been six other children in the family, and all of them rolled their heads and eyes from side to side at the age of 6 or 7 weeks. These symptoms persisted during the period of dentition and then disappeared.

After lasting for a few months, the disease always gets well, with or without treatment, and the symptom that first occurred, be it nystagmus or head movements, is, in my experience, generally the first to disappear.

The best drug to give is antipyrin, in one-grain doses two to four times a day. The bromides have also been recommended.

(2) *Partial albinism.*—The light hair and eyelashes, the glowing pupils, the pink iris, the nystagmus, the photophobia, and the defective sight of a typical albino make up a picture that, once seen, can never be forgotten. Mr. E. Nettleship, however, under the name of "partial albinism" has recently directed attention to an interesting group of cases in whom imperfect sight and nystagmus coincide with much slighter signs of albinism ('Royal London Ophthalmic Hospital Reports,' May, 1902). The condition is apt to run in families and to affect the males, although the tendency, as in hereditary optic atrophy and in several other conditions, is transmitted downwards by the female members. Mr. Nettleship's observations furnished me with a clue to the explanation of a form of nystagmus in children with which I had been familiar for some time. The condition, in my experience, is not uncommon, although its essential

nature is often overlooked or misinterpreted. The following case, seen only the other day, is tolerably typical of the condition:

(18) Henry G—, aged 6 months, examined on May the 26th, 1905. About one month after birth his eyes were noticed to "wobble." He was accordingly taken for advice to the special department of a London general hospital, where the surgeon is reported to have told the mother that "the child never had seen and never could see." Upon examination, I found a baby in good health, and with normally developed skull, who showed lateral nystagmus, but who responded readily to the flash test. Much compound hypermetropic astigmatism existed. The choroidal vessels were unusually distinct, except in the yellow spot region of the fundus oculi. The hair, eyebrows, and eyelashes, although not actually white, were light-coloured, and the iris contained a certain amount of pigment, having a bluish tinge. Henry was the fifth child in the family. The other children were said to be of very light complexion. The eldest, indeed, was stated to have white hair, bad sight, and spectacles.

In the following cases three children belonging to the same family were the subject of this interesting condition:

(19, 20, and 21) On February the 25th, 1903, William L—, aged 6 years, was brought to the North-Eastern Hospital with the complaint that his sight was bad and that his eyes "stuck together" in the mornings. There was slight chronic palpebral conjunctivitis, with the Morax-Axenfeld diplobacillus in the scanty mucus secretion. Lateral nystagmus existed. 3·5 D. of hypermetropia. The lad had reddish hair, eyebrows, and eyelashes, and his iris was grey-blue. The choroidal vessels were visible all over each fundus, except in the yellow spot region. On inquiry it was ascertained that William L— had two sisters, whose eyeballs had always been unsteady, The younger of these two girls, aged 10 years, presented nystagmus and shaking movements of the head, light hair, blue irides, pigmented cilia, and an albinotic type of fundus oculi. 2·5 D. of hypermetropia in the right eye, and in the left the same, with 1 D. of astigmatism, axis vertical. The elder sister, aged 11 years, manifested very similar conditions, general and ocular.

(3) *Post-meningitic and hydrocephalic nystagmus.*—When speaking of amblyopia in children I shall describe a fleeting form associated with meningitis. In certain cases these children exhibit a form of nystagmus, which persists for several years and, for aught I know to the contrary, permanently. This form offers no special peculiarities, but its nature can usually be recognised from the history of the case. The nystagmus associated with cases of severe hydrocephalus has already been mentioned earlier in this Lecture.

AMAUROSIS IN CHILDREN.

Leaving on one side hysterical amblyopia, night-blindness, amaurosis partialis fugax, congenital amblyopia, and amblyopia from non-use, none of which is common in children except the two last-named, there remain for description three conditions that occur exclusively in quite young children, viz., (1) Acute cerebral amaurosis; (2) Post-convulsive amaurosis; and (3) Amaurosis following prolonged blepharospasm.

(1) *Acute cerebral amaurosis.*—That many infants suffering from meningitis lose their sight from papillitis followed by optic atrophy, is a fact known to every student of medicine and duly set forth in every text-book. There exists, however, a type of case which is less common, where during the course of a cerebral attack sight is altogether lost without ophthalmoscopic signs of papillitis or atrophy, and the particular interest of such cases lies in the fact that the children often recover both sight and health at a later period. I am convinced that this "fleeting amaurosis," as I have elsewhere ventured to call it, is not so generally recognised as it should be, an omission the more curious seeing that its essential features have been worked out by Mr. Edward Nettleship ('Ophth. Soc. Trans.,' vol. iv, 1884) and by Dr. William Gay ('Royal London Ophthalmic Hospital Reports,' vol. xiii, 1893, p. 404), who have published excellent descriptive papers on the subject.

In my own experience, the patients are usually below two years of age. There is a history of recent illness marked by retraction of the head, fits, twitchings, drowsiness, stupor, rigidity, vomiting, bulging of the anterior fontanelle, headache, and perhaps other symptoms suggestive of an inflammation of the meninges of the brain. The temperature may be of distinctly febrile type. Obstinate constipation is sometimes present. At some period during the illness, which runs a chronic course, the mother finds that her baby ceases to take notice of things and to recognise familiar and, it may be, favourite objects. The loss of sight appears to be complete, and, so far as can be made out, to come on almost suddenly. At this stage the pupils, in my experience, are larger than normal, and possess little, if any, direct response to light, but beyond that I have never succeeded in obtaining any objective evidence of organic changes in the eyes. In the further course of the affection cerebral symptoms pass away, the child slowly regains his health, and sight returns gradually. The pupils react to light, and ophthalmoscopic appearances are negative.

The following case is typical:

(22) Henry K—, aged 7 weeks, attended the Evelina Hospital on July the 26th, 1901, with the statement that he had lately lost his sight. The baby, who was breast-fed, had suffered from vomiting for three weeks and from diarrhœa for a few days. His head was markedly retracted. The pupils were equal and active; there was no squint; the optic disc and retinal vessels showed no changes. The baby appeared to be blind, inasmuch as he took no notice of a bright light. August the 2nd, 1901—

The child had several "convulsion fits" soon after leaving the hospital, a week ago, and these have recurred in the interval. He still vomits. August the 9th, 1901—The head is still retracted, but the child is better in himself, and the vomiting has almost stopped. He notices nothing; there are no ophthalmoscopic changes. August the 23rd, 1901—Neck no longer stiff. Baby putting on flesh. Pupils equal, of medium size, but with little reaction to light. The child recognises his mother when she comes into the room. September the 20th, 1901—The child now "coos" when his mother comes into the room, and notices things about him. His sight is stated to improve daily. Pupils equal, with better action to light. Fundi normal. General health now satisfactory.

That a simple basal meningitis existed in most of my cases was the opinion held both by myself and by the physicians in more direct charge of the patients.

Such, in brief, are the essential features of what Dr. Gay has called the "acute cerebral amaurosis of infancy," than which it would, I venture to think, be hard to find a better descriptive name.

Nothing certain is known as to the anatomical basis for the blindness. Elsewhere ('Reports of the Society for the Study of Disease in Children,' vol. ii, 1902, p. 276) I have ventured to suggest that the essential factor is closure of the foramen of Magendie, leading, in the first place, to distension of the third ventricle, and then to pressure upon the optic chiasma. If from any cause the adhesions yield early enough, the consequences would appear to be twofold—first, relief to the meningitic symptoms, and, secondly, restoration of vision before the onset of atrophic changes in the optic nerve. Another view is that the blindness results from a temporary inhibition of the visual centres by toxic meningeal products (James Taylor).

(2) *Post-convulsive amaurosis.*—Not long ago Dr. Henry Ashby and myself described ('Reports of the Society for the Study of Disease in Children,' vol. iii, 1903, p. 197) a series of five cases, where temporary blindness seemed to be the direct outcome of severe convulsions in young children. The common history was that the infant had been convulsed for several hours or days, and that when he regained consciousness, he was blind and his arm and leg were paralysed. The sight returned completely, but not the power in the limbs. In other cases paralysis had been but slight, and the paresis disappeared before the amaurosis.

It may be objected that convulsions do not constitute a morbid entity, but are merely accidental complications of many pathological states. This is doubtless true. Our point was that the convulsions, whatever their origin, were themselves the actual cause of the blindness. The "explosions," or nerve-storms, may involve the visual cortical centres as well as the Rolandic motor areas, or the speech centre, and the period of discharge be followed by one of exhaustion. In those cases associated with hemiplegia, which becomes permanent, there can be little doubt that there is a grave organic lesion, such as thrombosis or hæmorrhage, involving part of the Rolandic area or its neighbourhood, but whether the lesion is the cause or the consequence of the convulsions in any given case must, for the present, remain an open question. The stage of coma, which is often prolonged for some time after the convulsions have ceased, may be the result of exhaustion or of toxin poisoning, and, when consciousness returns, the visual centres are left in an anæsthetic state, or the motor speech centre, or other motor centres, may remain in a temporarily exhausted condition.

The following case, which has recently fallen under my notice, is tolerably typical of the class described by Dr. Ashby and myself:

(23) Mabel B—, aged 2½ years, was seen by me on August the 15th, 1904. *History*—The patient was born on November the 5th, 1901. After suffering from thrush and from whooping-cough, she began to waste at about the end of the fifth month. When the illness had lasted two months—*i. e.*, at the end of the seventh month of life—her mouth, eyes, hands, and legs became convulsed, a condition that lasted for one week. For a month the baby "lay like one dead." She then began to recover, and it was found that she was blind. The amaurosis persisted for about two months, and then slowly passed away. The first sign of returning sight was that when the baby was taken into the light she shut her eyes, a thing she had never done before. Next, she smiled and held out her hands on seeing her mother; food was then noticed. A further stage was marked by the baby, on hearing anybody enter the room, looking about her to see who it was, and by "fixing" the newcomer for a moment. The mother thinks that, to begin with, sight could be sustained for a few moments only. Upon examination, the child was well nourished, walking, and talking well. She readily noticed things held before her, and, baby-like, grabbed at them. Pupils equal and active. Disc, vessels, and central region of each fundus normal. Slight nystagmus on lateral movements of the eyes.

The conclusions drawn by Dr. Ashby and myself regarding this form of amaurosis were as follows: (1) that there is a form of amaurosis which occurs in infants or young children which is post-eclampsic, due to anæsthesia of the visual centres; (2) that the convulsions, which may be due to various causes, are apt to be severe and accompanied by coma; (3) that the amaurosis may be associated with aphasia and paresis of hemiplegic distribution; (4) that the amaurosis is, for the most part, transient; (5) that in some instances there may be hemianopia.

(*To be continued.*)

INFANT MILK DEPÔTS IN GREAT BRITAIN.

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Attention has on several occasions been called to these institutions in the columns of the British Journal of Children's Diseases; and though many are now familiar with the general plan on which they are worked, I may, perhaps, for the benefit of those who have not inquired into the practical details of infant milk depôts, briefly outline the essential points in their procedure. The object is two-fold—firstly to provide a suitable food for infants among the poorer classes whose mothers are unable to nurse them, and, secondly, to organise a system of inspection and visitation whereby the mothers may be taught how to use the prepared food, and how generally to manage their infants properly. To this end milk is obtained by contract under special precautions as to purity and cleanliness; it is then diluted and mixed with cream and sugar in varying proportions suited to infants of different ages; then it is bottled and subjected to heat in a "steriliser," and sent out in quantities sufficient for twenty-four hours. Thus a child between, say, three and five months old would receive a mixture containing two parts of milk to one part of water, with a due amount of added sugar and cream. This would be contained in nine bottles, each holding 5 ounces, so that all the mother would have to do when feeding time came would be to warm the bottle in a jug of hot water, remove the spring stopper and substitute an indiarubber teat. Full instructions, both verbal and printed, are given to all mothers applying for the milk. Mothers are expressly told that depôt milk is only to be used where breast milk is not available; they are asked to bring the children up for weighing and inspection as often as possible, and a lady inspector visits the home of the infant to see that the milk is properly administered, that it agrees with the child, and that the general rules of hygiene are as far as possible understood and observed. This seems simplicity itself, but as a matter of fact the system involves many intricate and important questions. In the remainder of this paper I propose to deal with a few of these, under the following headings:

(1) The sources and cost of the milk supply.
(2) The heating and modification of the milk.

(3) The method of distribution.

(4) The question of medical control.

(5) The question of the results obtained.

(1) However difficult it may be for the ordinary householder to obtain a pure and wholesome milk, the milk depóts have conclusively proved that this object is by no means impossible of attainment. For about ninepence a gallon milk is procured under the most stringent regulations as to purity and freedom from contamination, even where only two or three churns are required daily. In many places the contractor is found to take a great interest in the matter, and it seems certain that, provided a real demand for pure milk arose among the general public, the article would be forthcoming at a reasonable price. This, however, would not entirely solve the problem of infant-feeding among the poorer classes; a perfectly good milk is liable to contamination at small local dealers and in the houses of the people themselves. Moreover, the modification which renders it suitable for young infants is not easily carried out in slum dwellings, or even in the houses of the more prosperous of the working classes. Hence the necessity at present of the heating and modification of the milk at a central depôt.

(2) The exact treatment the milk receives varies somewhat at the different depôts; the principle, however, is the same in all. The milk is modified to suit children of various ages and is then subjected to heat. Some heating is undoubtedly necessary, for even with care as to cleanliness, etc., in milking, a certain number of bacteria are present in milk. The two classes of *most* importance are firstly the ordinary pathogenic bacteria which may accidentally have got into the milk, such as bacterium typhi or pyogenic cocci, and secondly, the spore-bearing bacilli of the Subtilis group which, if they develop in any number, cause important changes to take place and render the milk unfit for infant-feeding. Heating undoubtedly destroys the organisms of the first class, and though some doubt has been expressed as to the tubercle bacillus, Macfadyen's experiments seem to show that even this resistant organism is destroyed by the methods commonly adopted. As to the second class, although the bacteria themselves are destroyed, Flugge has shown that the spores require two to six hours at 100° C. for their destruction. Provided, however, that the órganisms are not present in too great numbers, it was shown that heating the milk to about 70° C. with subsequent cooling enabled it to remain suitable for infants for a day or two; the spores do not develop at all rapidly at low temperatures, so that for

practical purposes it is enough to destroy the bacteria themselves if the milk is subsequently not allowed to rise above 60° F., and is used in the course of the next twenty-four hours. When testing the efficacy of various degrees of heating milk, Macfadyen found that the plates had to be kept for seven days before all the spores developed colonies, and Variot found that in order to obviate changes in milk which had to be kept a week, it was necessary to heat it to 108° C. under high pressure for a considerable time. As a matter of fact at Liverpool the milk is heated to 210° F. for thirty minutes, at Battersea to 212° F. for ten minutes, at Glasgow to 210° F. for fifteen to twenty minutes, and at York to 212° F. for five minutes. At Leith it was formerly heated to 212° F. for thirty minutes, but after a series of careful experiments Dr. Robertson, the Medical Officer of Health, found that equally good results could be obtained by twenty minutes' exposure to 170° F. I am strongly of opinion that the last mentioned process is by far the best. The changes produced in milk by subjecting it to high temperatures are but little understood, and though there is reason to believe that actual scurvy is rare among depôt-fed children, either in Great Britain or France, it must be remembered that the question does not end there. Apart from the fact that in this country at any rate a large proportion of children appearing on the registers of milk depôts only take the milk for a comparatively short time, the mere absence of marked scorbutic symptoms is rather an indication of the insusceptibility of the individual than of the propriety of the food. It is impossible to say in the majority of cases what actual damage is done by a "scorbutic" diet, but seeing the extreme effects produced in the few it is only reasonable to suppose that some effect is produced in many others. Heating the milk to the point of Pasteurisation has been shown by Holt's statistics to be much less likely to produce scurvy than "sterilisation," and thus it is only fair to conclude that the "vital" properties are not destroyed to so great a degree by the former process.

(3) The method of distribution is certainly a weak point in all milk depôts in this country. Mothers dislike the trouble of fetching or sending for milk which a milk vendor, even in a very small way of business, will deliver at their houses. It is all very well to point out the superiority of depôt milk over the stuff sold as milk by small dealers. As practical organisers, we must make due allowance for the weakness of human nature. To bring the milk nearer the houses of the people, in most places agencies have been established in various districts of the town. These agencies consist

of ordinary shops, the proprietors of which are supplied with milk by the depôt, and given a percentage on the amount sold. This system, however, seems to me most unsatisfactory. Apart from the fact that the milk may be tampered with or kept too long, it is impossible to keep any real watch over children supplied in this way through the shops. In Glasgow, the local officers of the Charity Organisation Society co-operate with the Medical Officer of Health and try as far as possible to trace the infants, but in practice this is a most difficult matter. Then again, when sold through the shops, there is nothing to check well-to-do people from providing themselves with food for their infants below cost price—in other words, at the expense of the ratepayers or of private charity.

(4) I do not believe that it is possible to institute in this country the elaborate medical supervision of infants fed at milk depôts which obtains in France. An attempt to do so would result in one of two things: either the depôt would remain unused except by perhaps a very few, or it would have to be converted into an out-patient dispensary. It is useless to give medical advice without both prescribing and dispensing drugs to the poorer classes of the community, and both these seem to me outside the function of a milk depôt. A milk depôt to which children have to be brought weekly for medical inspection alone is not workable in England, while the treatment of actual disease is best left to the general practitioner and the existing hospitals and dispensaries. I consider that all cases should be carefully watched by the lady inspectors, that weighing (which might be done by the inspectors at home) should be encouraged as far as possible, and that records of all cases should be kept; but further than this it is not possible to go. I think, however, that all depôts should be placed under the control of a committee on which medical men should be in a majority, and the general practitioners of the district should be adequately represented. This would be simple in the case of those privately organised, and should not be impossible in the case of those which are supported by the municipal authorities.

(5) The results obtained by the various milk depôts have, I think, been the source of many ill-advised statements, both for and against. The oldest milk depôt in England has been going about five years, and the largest probably only affects about 8 per cent. of the children born in the city it serves. To attempt therefore to defend or condemn milk depôts by appealing to the statistics of infantile mortality is both premature and misleading. The fact remains that the mortality rate among depôt-fed infants is low—

about 80 or 90 per 1000, as compared to 160 for the 76 large towns (1904). But even this is no certain ground for conclusions. In the first place many infants are ill when first brought to the depôts, and many only take the milk for a short time. Thus at Liverpool, during last year 2030 infants under twelve months were fed on the depôt milk, and of these 169 died. Of those who died 58 had less than one week's supply, and 6 were irregular customers, while 139 were definitely ill when first brought to the depôt. I owe these recent figures to the courtesy of Dr. E. W. Hope, the Medical Officer of Health, to whom, as to others in control of milk depôts I am indebted for much valuable information. On the other hand, it is frequently found that those who avail themselves of depôt milk are of a class in which the infant mortality is not so very excessive. Apart, however, from statistics there seems to be a very general opinion among medical men in the various localities where milk depôts exist as to their usefulness and success. It may, too, be pointed out that a diminished death rate would only show a part of the advantages resulting from the establishment of a milk depôt, and that the occurrence of various conditions, such as rickets and poor physical development, not necessarily fatal, should be much checked by the provision of a suitable food for infants. A general improvement in the physical condition of infants of the poorer classes even if very marked, would hardly be demonstrable by statistical evidence, and could only be recognised by those with opportunities of closely observing the districts supplied during a number of years. I may perhaps be permitted here to allude to a scheme I proposed and set forth in the 'Bristol Medico-Chirurgical Journal' for June, 1905; briefly my plan was to limit the area of operations of the milk depôt, in a way similar to that adopted by lying-in charities. In this way reliable statistical evidence could, I think, be obtained after a few years.

A CASE OF TUBERCULOSIS OF THE RETRO-PHARYNGEAL GLANDS, LARYNX, AND TEMPORAL BONE IN A CHILD, AGED 2 YEARS.

By Paul Mathews, M.B., Ch.B.,
Resident Medical Officer, Sick Children's Hospital, Newcastle.

The following case presented some points of unusual interest and is, I venture to think, worthy of being recorded.

J. D—, aged 2 years, was admitted into the Sick Children's

Hospital, Newcastle, on March the 8th, 1905, suffering from stertorous dyspnœa of six weeks' duration. The history showed that the patient had an attack of impetigo two months previous, which subsided under treatment. A fortnight later respiration began to be stertorous and the stertor had gradually became more severe. There was no history of dysphagia or of cough or of night-sweating. Patient was a robust child until she was weaned, and she was breast-fed for one year and three months. No history of any infectious or other disease.

She is the third child of four, and the other three children and the parents are healthy. No history of tuberculosis was obtained.

Upon admission patient was found to be well-developed and well-nourished. There was no cyanosis and respiration was not hurried, but was laboured and accompanied at each inspiration by loud stertor, which was most marked when the patient lay down. The temperature ran between 98° F. and 99° F.

Examination of the throat revealed the presence of a rounded swelling which projected from the back wall of the pharynx just to the right of the middle line and pushed forward the uvula. The mass was firm and elastic. There were no signs of cervical caries. Some small glands were palpable running down the right carotid triangle. The chest and abdomen were natural.

She was operated upon on March the 9th by Mr. William Vickery, who made an incision along the posterior border of the sternomastoid muscle on the right side. Some enlarged glands were exposed running down the great vessels and were dissected out. A dissection was made down to the pharyngeal swelling, which proved to be formed of a glandular mass caseating in the centre. This was removed and the cavity was scraped with a sharp spoon. The wound was then closed, a drainage-tube being left in.

The wound healed slowly. A sinus was left, which remained open about six or seven weeks. Towards the end of that time the patient's general health began to fail and she developed a persistent cough. Auscultation revealed some prolongation of expiration over the right apex, but there was no impairment of percussion resonance. There was some dulness over the manubrium sterni, and Eustace Smith's murmur was audible.

The patient, who had been taken home, was readmitted on June the 3rd, under the charge of Dr. J. S. McCracken. She then had a temperature swinging up to 103° F. at night. She was still well-nourished. The cervical wound had broken down and was discharging. There was considerable dyspnœa, and she had a frequent hacking cough. There was marked hoarseness. Examination of the chest showed consolidation of the apex of the right lung as far down as the third rib; numerous crepitations were audible. Eustace Smith's murmur was well-marked. Patient became rapidly worse; the hoarseness and dyspnœa became intense, and death supervened on June the 15th.

Post-mortem examination.—*Right lung*—This showed extensive consolidation of the apex, with a small cavity, about the size of a pea, in front. The pleura was almost universally adherent, and over the apex was thick and laminated. Scattered through the base were miliary grey tubercles. *Left lung*—Miliary grey tubercles were scattered through the organ. *Bronchial glands* much enlarged and caseous. *Larynx*—This showed extensive ulceration of both aryteno-epiglottidean folds. The *cervical glands* were enlarged and caseous in the right supra-clavicular and carotid triangles. Enlarged glands were also found in the posterior mediastinum and in the mesentery. *Pericardium*—A small patch of inflammation was visible near the reflection from the great vessels. The other organs displayed nothing of note, except that the right temporal bone was carious between the middle ear and the apex of the petrous portion.

The above case presents several points of interest. Assuming the retro-pharyngeal gland was the first to be infected, the site of invasion of the bacillus must be sought in the area drained through it. The gland in question belongs to a group which is active during infancy but undergoes spontaneous atrophy towards the close of that period! Waterhouse (1) says they are rarely met with after the third year. They appear to be not infrequently the seat of acute septic inflammation, and may be infected secondarily to lesions in the upper respiratory passages and sometimes from eczematous conditions of the face and scalp (2). The patient had no history of any acute rhinitis or of any of the acute exanthemata which are so frequently accompanied by naso-pharyngeal catarrh. There is, however, the history of impetigo occurring two weeks before the onset of the stertor.

The subsequent course of invasion appears to have been *viâ* the lymphatics of the neck and mediastinum to the glands in the abdomen and round the bronchi and at the root of the lung. The pulmonary condition appears both from the history and the post-mortem findings to have been secondary, and the line of infection may well have been by direct extension from the caseous glands at its root.

The laryngeal condition was well marked, but, as far as one can gather from the history, was not of long standing, and was probably secondary to the pulmonary condition; it does not appear to have been caused by direct extension from the pharynx, as the pharyngeal mucosa was—macroscopically, at any rate—healthy. It is rare to meet with this condition at such an early age. Holt (3) says that laryngeal tuberculosis is almost unknown in infancy, but quotes a case published by Rheindorf in a child aged 13 months.

The condition of the temporal bone is of interest and was unsuspected during life. There were no signs of otitis media, no facial paralysis, and no enlargement of the periotic glands. The condition was probably secondary, though the possibility of the condition arising from a primary tuberculosis of the middle ear must be borne in mind. The absence of enlargement of the periotic glands is against this in the case under consideration, though tuberculosis of the middle ear and temporal bone is not infrequently primary in infants (Jobson Horne (4)). In the present case the data are not conclusive.

In conclusion, I must thank Mr. Vickery and Dr. McCracken for permission to publish these notes.

REFERENCES.

1. Treves' 'System of Surgery,' vol ii.
2. *Loc. cit.*
3. Holt's 'Diseases of Infancy and Childhood.'
4. 'Lancet,' 1903, vol. i.

The Society for the Study of Disease in Children.

A MEETING of this Society was held on Friday, October the 20th, at No. 11, Chandos Street, W., Dr. PERCY G. LEWIS (Folkestone) being in the chair.

A Case of Unilateral and a Case of Bilateral Persistence of the Fourth Branchial Cleft were shown by Mr. P. LOCKHART MUMMERY. One patient displayed a minute opening on both sides of the neck, just at the anterior border of the sterno-mastoid muscles, and about three quarters of an inch above the sterno-clavicular joints. From the opening on the right side a sinus extended upwards to a point behind the tonsil. It was not possible to make certain whether it communicated with the pharynx or not.

Closely associated with the sinus in its whole length there was a hard bar of cartilage, which could be distinctly felt under the skin. On the left side the sinus could only be traced for about two inches, and just behind the external opening there was a cyst about the size of a hazel-nut. From the opening on the right side clear mucus exuded, while from the left opening there was a milky discharge. An hereditary factor could be traced through two generations. In the second case there was a small opening at the anterior border of the right sterno-mastoid muscle, and about half an inch above the right sterno-clavicular joint. From this opening a thick cord could be traced upwards beneath the skin for about three quarters of an inch, and ended above in a cyst which was situated beneath the sterno-mastoid muscle. Pressure on this cyst caused a yellowish discharge to escape.

A Case of Lymphadenitis in a girl, aged 2 years, was shown by Dr. T. R. WHIPHAM. Glands in the cervical, axillary, and inguinal regions were stated to have suddenly enlarged two months ago, accompanied by rise of temperature, malaise, and anorexia. The glands still further enlarged during the next month, with an increase in size of the liver and spleen. The temperature kept irregular, and in the sixth week rose to nearly 105° F., coincident with a severe attack of herpes zoster on the left side of the chest, after which it fell to normal and the glands began to decrease in size.

A Case of Splenic Anæmia in a girl, aged 8 years, weight 2 st. 1½ lb., was also shown by Dr. WHIPHAM. She suffered from wasting rickets in infancy. When six years old she began to be anæmic. She had been in hospital on and off for a year with marked anæmia, occasional enlargement of the spleen, irregular high temperatures and frequent vomiting.

Two Cases of Splenomegaly were shown by Dr. J. PORTER PARKINSON. A boy, aged 11 years, had had a very enlarged spleen for ten years and at the present time the liver was slightly enlarged. There was slight jaundice, the red corpuscles of the blood were diminished, but the colour index was normal, and there was slight leucocytosis. His infant sister, one year old, had leucocytosis and a very enlarged spleen. There were also signs of rickets. The exhibitor pointed out that the clinical features resembled splenic anæmia, but the blood change was not characteristic of that disease, while jaundice, which existed in one of the patients, was not found in true splenic anæmia.

A Case of Splenic Hyperplasia was shown by Dr. EDMUND CAUTLEY. The girl, aged 8 years, was anæmic, had a large prominent abdomen, a much enlarged spleen, and an enlarged liver. A hæmic murmur was heard over the heart. No cause could be found in the family or past history of the case. Possibly the very carious teeth were responsible for the condition. There was marked leucopenia.

A Congenital Lipoma of the Arm was shown by Mr. W. MILNER BURGESS (Harlesden). The tumour was noticed three weeks after birth.

Two Mongolian Types were showed by Dr. G. A. SUTHERLAND, one a pure Japanese female infant, aged 10 months, the other a Mongolian imbecile, aged 2½ years. The Japanese baby possessed certain cutaneous features, of anthropological interest, in the shape of blue pigment spots.

There was a large blue patch over the buttocks, and some smaller spots over the back and shoulders, and one on the dorsum of the left hand. Regarding this pigmentation it was stated that it might increase in extent for some months after birth but usually disappeared entirely during the first few years of life.

A Case of Diffuse Angioma of the Liver in a boy, aged 7 years, was the subject of a lantern demonstration by Dr. JAMES E. SAWYER (Birmingham). The liver showed a most marked degree of cirrhosis, and throughout the organ an angiomatous condition was present. Tubercular areas could also be made out microscopically. There was a great dilatation of the capillaries in the kidneys, which seemed to be of a similar nature to that in the liver. Tubercular disease of some of the other organs was also present. The boy had had gradual enlargement of the abdomen for fifteen months, with ascites.

Two Specimens of Congenital Hypertrophic Stenosis of the Pylorus were shown by Dr. GEORGE CARPENTER. The first case was seen at three weeks old, the pylorus then being of stony hardness and as large as the terminal phalanx of the little finger. Symptoms commenced when a fortnight old. Eleven days later Mr. Ewen Stabb performed Loreta's operation, the pylorus then admitting the little finger. The child died fifteen days afterwards of starvation. Fluid then could not pass through the pylorus and the stomach capacity was 4 oz.

The second child was 5 weeks old and symptoms commenced immediately. A lump of stony hardness, as large as that in the first case, was felt at the pylorus, as also thickening of the stomach walls. The child was operated upon by Mr. Lockhart Mummery the following day by gastro-enterostomy. Loreta's operation and pyloroplasty were deemed impossible of performance owing to the stony hardness of the growth. The child died a few hours after the operation.

Three Cases of Congenital Hypertrophy of the Pylorus treated by Pyloroplasty were reported by Dr. EDMUND CAUTLEY. The first weighed five and a half pounds before operation. He recovered but died subsequently on the fifty-fourth day from an attack of ileo-colitis. The other two were very wasted infants. One died five hours after operation from collapse ; the other died suddenly on the fourth day when apparently doing well.

A Dermoid Tumour of the Mediastinum, removed from a child of 2 years, was shown by Dr. GEORGE CARPENTER. The tumour, which was cystic, was the size of a large fist. The cysts contained a brown gelatinous material, and in one of them were hairs and sebaceous matter. Between the cysts were fat and fibrous tissue along with a few calcareous masses. The child first came under observation as a case of hydrothorax with dyspnœa. He was aspirated with relief to the urgent symptoms. The patient was discharged from hospital in good condition apart from the mediastinal tumour, but was subsequently re-admitted moribund.

The following members took part in the discussions: Drs. WILLIAM EWART, ROBERT HUTCHISON, THEODORE FISHER, PERCY LEWIS (Folkestone), L. S. DUDGEON, R. P. COCKBURN, and G. E. SHUTTLEWORTH.

Editorial.

THE TREATMENT OF INTUSSUSCEPTION IN INFANTS.

The Provincial Meeting of the Society for the Study of Disease in Children recently held in Sheffield was productive of many interesting communications, which can now be studied at leisure in Vol. v of the 'Reports' of the Society, by those who were unable to be present on that occasion. Not the least valuable amongst these is a paper on "The Treatment of Intussusception in Infants," by Mr. George Wilkinson, of Sheffield.

Mr. Wilkinson dissents with the view held by many at the present day that laparotomy should be immediately performed in such cases. He points out that the statistics of St. Thomas's Hospital, the most complete of those recorded, dealing with consecutive cases from 1875 to 1900, point strongly to the conclusion that in children under 2 years of age the risk is less from non-operative methods than from primary laparotomy, the recovery rate from the former being 40·5 per cent. and from the latter only 27 per cent.

From the year 1897 onward immediate laparotomy was the routine practice at this hospital, with the result that the percentage of recoveries was 30·6 per cent., or 10 per cent. less than that obtained by injection, insufflation, and so on.

Mr. Wilkinson's own statistics are small—some eight cases in all. Five of these were treated by hydrostatic pressure alone, and recovered. Two were submitted to hydrostatic pressure followed by laparotomy, with one recovery. One case was treated by immediate laparotomy, and died.

He justly observes that such small figures are quite insufficient data on which to base any general conclusions. But they are nevertheless very suggestive, and are supported by the results obtained at St. Thomas's Hospital.

The author advocates the use under anæsthesia of hydrostatic pressure with normal saline solution at a temperature of 105° F., applied through a funnel held at a height of three feet, no attention being paid to the amount of fluid injected, constant pressure and the time element being the important factors. He thinks that failure frequently arises from the pressure not being applied sufficiently long.

The only certain sign of successful reduction is the appearance of fæcal material following the removal of the nozzle from the bowel. Should reduction not follow or should it be but partial, or should there be any doubt about it having taken place, he advocates a small incision over the ileo-cæcal valve without exposing a large area of the intestines. The resulting shock is much less by this method—a most important factor in operating on young children. Moreover, a partial reduction by hydrostatic pressure renders the subsequent operative procedure much simpler.

That cases of intussusception recovered by hydrostatic pressure alone, as also by other mechanical means, is well known to many physicians who frequently successfully practised this method of treatment before these cases came to be looked upon as surgical and immediate laparotomy as the correct method of practice.

Evidently the last word has not been said on the treatment of intussusception in infants, and the trend of modern practice will doubtless be to recognise the value of prolonged fluid pressure and to view laparotomy as secondary to hydrostatic treatment and not as an initial and indispensable procedure.

Abstracts from Current Literature.

Pathology.

Imbecility; left hemiplegia; epilepsy; post-mortem description (*'Arch. de Neur.,' vol.* XVIII, *2nd s., p.* 461).—**Bourneville** and **R. Mangeret,** in a memoir of twenty pages, give a very detailed account of the clinical history and post-mortem findings in a boy who died at the age of 17 years. The patient was perfectly healthy until, when 11 months old, he had a series of convulsions, more marked on the left side. This event was followed by left hemiplegia and great diminution in intelligence. Eighteen months later epilepsy supervened, which persisted; in some of the diurnal attacks there was no loss of consciousness, and the movements were confined to the left side. The child's disposition was gentle. The left side did not develop so well as the right, even the left testicle being very small; the left half of the skull was smaller than the right. At the autopsy was found an extreme atrophy of the right cerebral hemisphere, which only

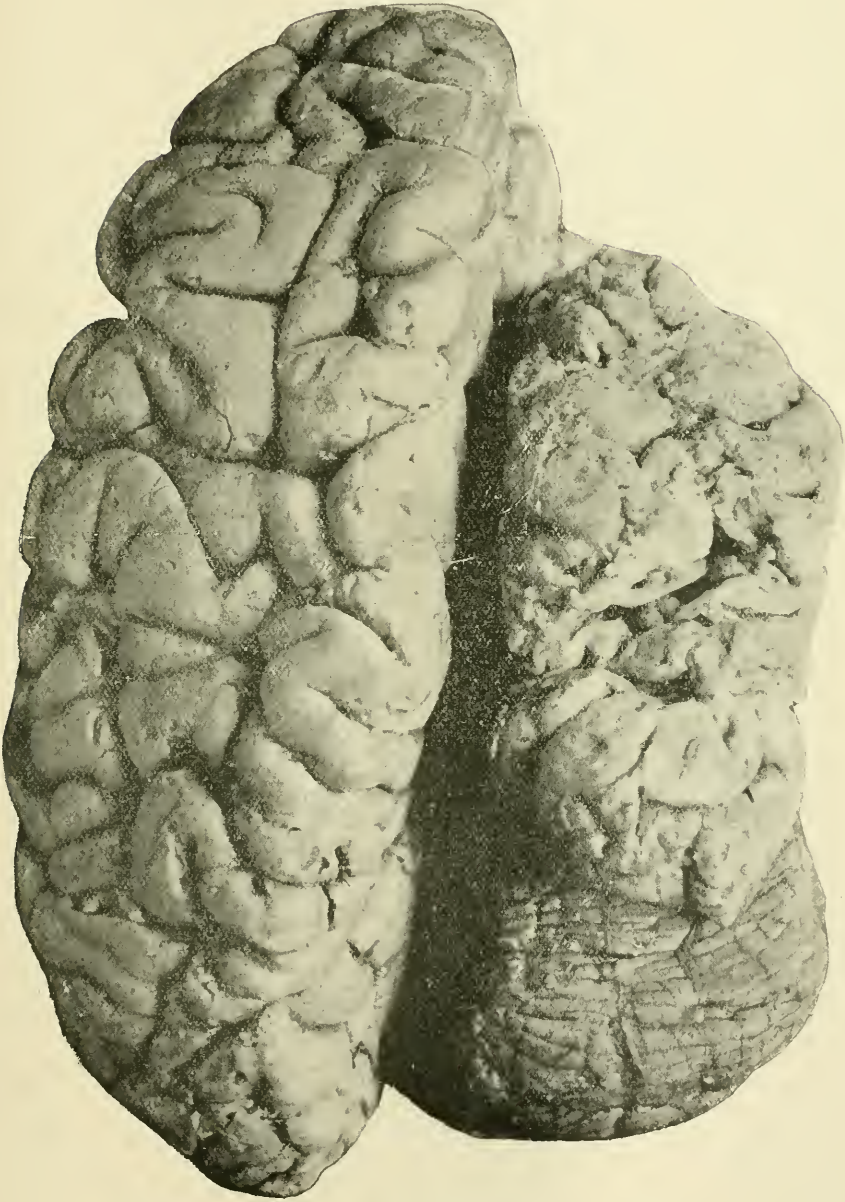

FIG. 1.—Convexity of brain from case of left infantile hemiplegia. Great atrophy of right cerebral hemisphere, uncovering the cerebellum (Plate XI).

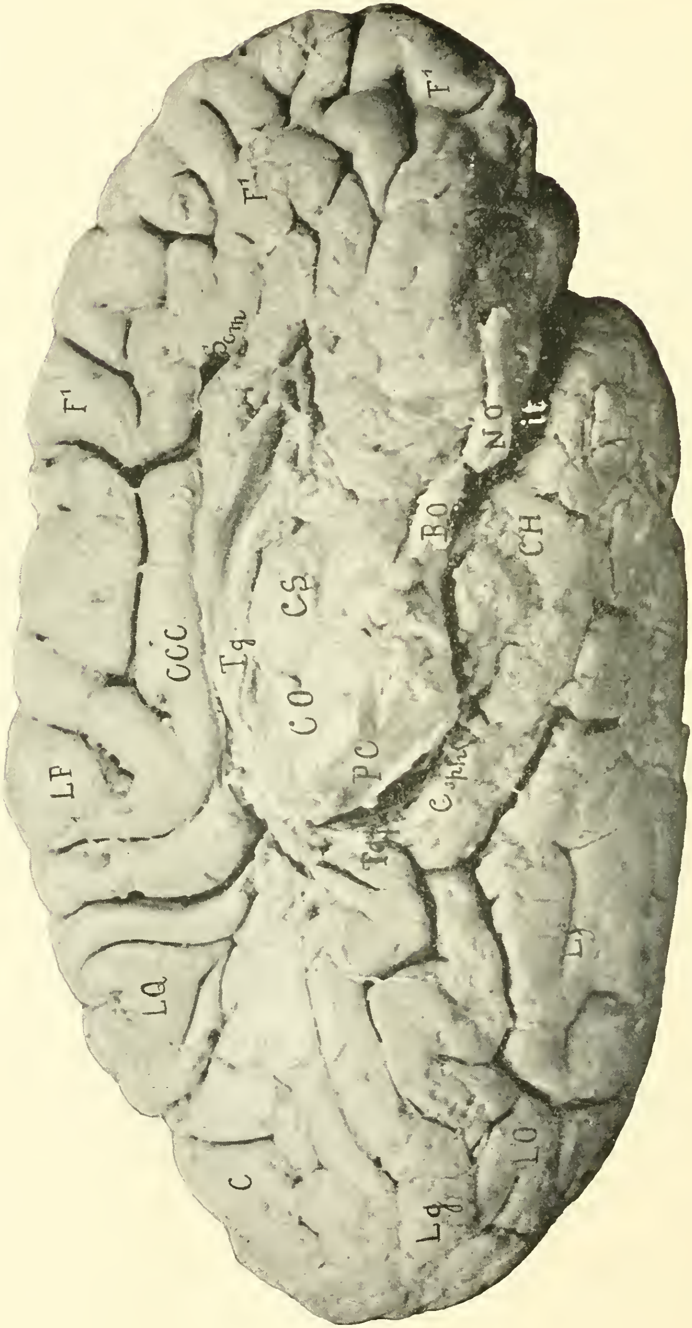

FIG. 2.—Left cerebral hemisphere (internal surface) from a case of left infantile hemiplegia. Complete absence of corpus callosum seen (Plate XII).

weighed 133 grammes, the left weighing 425 grammes. This atrophy affected the right arteries, the right peduncle, and the right of the pons. There was contralateral atrophy of the cerebellum; the right cerebellar hemisphere weighed 73 grammes, whilst the left weighed only 43 grammes. A rare complication was present in the form of entire absence of the corpus callosum. There was a considerable space between the atrophic cerebral hemisphere and the cranium, which was greatly hypertrophied on that side. Two of the plates are printed with this abstract. A. Ernest Jones.

Contribution to the study of Sach's family amaurotic idiocy (*'Neurol. Central.,' vol.* xx; *'Arch. de Neurol.,' January,* 1905, *vol.* xix, *p.* 65; see also *'British Journal of Children's Diseases,'* 1905, *p.* 281). —**H. Higier** has collected twenty-four cases of this disease from the literature and adds a description of three new ones. He points out the characteristic onset about the end of the first year, the development of apathy, paralysis, and hyperacusis. In the fundus is seen atrophy of the papilla, conversion of the macular region into a white patch whose centre is seen as a red point. Eight autopsies have been held, with four examinations of the retina. The evidences are those of a degenerative atrophy with no signs of inflammation. Progressive destruction of the large pyramidal cells and tangential fibres of the cortex are seen; also descending degeneration of the pyramidal tracts, with (rarely) lesions in the descending root of the fifth nerve, of the band of Reil, of the upper segments of Goll's column, and of the anterior horn cells. The retina shows atrophy of the optic nerves, slight œdema of the layer of nerve-cells, and a thickening of the external molecular layer and Henle's fibres in the yellow spot. The fovea contains a granular deposit—probably *débris* of softened pigment epithelium and the outer portions of the rods and cones. A. Ernest Jones.

Infantile paralysis (*'Australasian Med. Gaz.,'* 1905, *vol.* xxiv, *p.* 193). —**R. Burnet Ham** investigated an epidemic in Brisbane and other places. Out of 108 cases only 1 was over 14 years of age. Of 29 aged 2 years, and 28 aged 3 years, all recovered; 3 out of 10 aged 4 years died, and the only child affected at 9 years of age died. The rest recovered. Thus more than half were over 1 and under 4 years old. In 3 cases Weichselbaum's organism was found in the nasal cavities. Twenty-three cases of cerebro-spinal meningitis were reported, all but 2 under 15 years of age; 16 were under 7 years of age and 5 of them died. Epidemics of infantile paralysis have been observed to follow scarlet fever, pneumonia, influenza, measles, and diphtheria. This epidemic in Queensland was preceded by a severe epidemic of influenza and an extraordinary outbreak of mumps. Most of the patients were of the hospital class, ill-nourished and badly fed. It was not common to find more than one member of a household attacked. Nitrite of amyl is recommended in the earliest stages of the disease.

Edmund Cautley.

Intra-uterine amputations (*'Arch. of Pediat.,'* 1905, *vol.* xxii, *p.* 342). —**W. L. Stowell** describes the case of a boy, aged 20 months, with various deformities: absence of the distal phalanx of the right index finger, of the two distal phalanges of the middle finger, amputation through the first phalanx of the ring finger, and a deep double groove round the first phalanx of the little finger. All the fingers of the left hand were partly webbed, none of normal length, the third and fourth having constrictions which leave the ends like small knobs. The right leg presented a circular groove in the lower third and the left leg a deep circular groove below the knee. Talipes varus and webbing of the toes was present on the left side. There is no satisfactory explanation of cases like this. They have been ascribed to heredity, traumatism, amniotic bands, pressure of the cord, and embryonal defects. EDMUND CAUTLEY.

Medicine.

Epidemic of measles of gastro-intestinal type (*'Lyon Méd.,' April* 23, 1905).—**Gillard** reports twenty-five cases treated at the Clocheville Hospital at Tours. There was diarrhœa of short duration but having special characteristics, green in colour, and very offensive. Some cases terminated in death. The "epidemic" nature of these cases was striking; in fifteen days twenty-five cases of measles were examined in which diarrhœa was noted eighteen times and vomiting eight times. The diarrhœa occurred in cases with a normal eruption, and in subjects of good general health; the youngest was 3, and the eldest 12 years of age. In the majority of cases the onset of diarrhœa took place on the second or third day of the eruption. According to Trousseau, when diarrhœa occurs during measles it appears at the same time as the eruption, and others have noticed diarrhœa appearing from the eighth to tenth day after the onset of the eruption. There were on an average twelve stools in twenty-four hours, of yellowish or greenish liquid like the colour of spinach, without any of the dysenteric character described by Trousseau, extremely fœtid; the duration was from two to nineteen days. The vomiting occurred from four to twelve times in twenty-four hours and ran a parallel course with the diarrhœa. The general condition of those attacked was good, but in eight cases it was grave, and in four terminated fatally; broncho-pneumonia existed in six of those cases. Of the four fatal cases, in one the temperature fell to 36° C., in the others it was raised.

VINCENT DICKINSON.

Therapeutics.

Tabetic form of inherited syphilis of the nervous system greatly relieved by mercury treatment (*Société de Neurologie, February* 2, 1905; *'Arch. de Neurol.,' March*, 1905, *vol.* XIX, *p.* 251).—**Guillain** and **Thaon** showed a boy, aged 14 years, with unequivocal inherited syphilis, who two years ago began to suffer from lightning pains in the lower limbs and to manifest ataxy. In the two months preceding examination this had progressed rapidly and he then had great ataxy, Rombergism, dysarthria, dysphagia, a little amnesia, and psychic obnubilation. Under treatment with mercury he rapidly improved, and in four months lost completely his ataxy, Rombergism, and dysarthria. He still had, however, abolition of his patellar and Achilles reflexes, with double optic atrophy and loss of pupil response both to light and to convergence. A. ERNEST JONES.

Cerebro-spinal fever (*'Arch. of Pediat.,'* 1905, *vol.* XVII, *p.* 278).—**C. G. Stockton**, in a paper on treatment, draws special attention to the use of the hot bath, as recommended by Aufrecht in 1894, spinal puncture and drainage, with or without injection into the canal of medicinal agents, and the use of subcutaneous injections of corrosive sublimate. The hot bath is given at 104°–106° F., once or twice daily, for ten minutes. Netter gave one for twenty minutes every three hours. Many good results by different observers are quoted. In some cases drugs and lumbar punctures were also made use of. Apparently this treatment is harmless, is generally followed by relief of symptoms, and in some instances has apparently proved beneficial. Injections of 9–12 c.c. of 1 per cent. lysol solution by Seagers in the Lisbon epidemic, 1901–2, resulted in a mortality of 42 per cent. of 31 patients. **Morris Manges** ('*Med. News*,' 1904) injected 10 c.c. in each of three cases which recovered. He recommends a dose of 3–9 c.c. for children. From a study of reported cases, Stockton concludes that no special benefit results from lumbar puncture, with or without spinal injections. Angyan injected subcutaneously along the spinal column 0·0005 to 0·005 grm. once a day. Others have used this treatment, but the results are not conclusive. Stockton recommends absolute quiet in dark, airy rooms; attention to the proper functions of the body; hot baths, if they appear to do good; lumbar puncture, repeated if necessary; antipyrin for the reduction of fever and the relief of headache and hyperæsthesia; opium or bromides, with or without antipyrin if further measures are necessary for the relief of pain and convulsions; and mercury for its elimination and laxative effects.—**F. Hubor** ('*Arch. of Pediat.*,' 1905, *vol.* XXII, *p.* 338) mentions the intra-nasal use of germicides, advocated by Jacobi for years, as a prophylactic measure. In the profound toxæmic or fulminant type no remedy appears of value. In every case the strength must be maintained by proper nourishment and skilled nursing. Plenty of water and a fluid diet are recommended and support for the head and neck. Nasal feeding may be required. Cold applications to the head, colon irrigation at 80° F., or mustard packs when the fever was over 103° F., phenacetin and codein or morphia for headache, pain, and restlessness, and potassium iodide as a routine drug were the general measures adopted. Warm baths at 95° F. seemed beneficial. Lumbar puncture temporarily relieved pressure. Lysol injections yielded indifferent results. Diphtheria antitoxin has been tried without beneficial results. Prevention is better than cure.

EDMUND CAUTLEY.

Otology, Laryngology and Rhinology.

Torticollis following the removal of adenoids ('*Arch. Internat. de Laryngol.*').—**Ferreri** mentions the tendency of the operation to cause irritation in the ears, nose, and throat. He mentions two cases, one, a girl, aged 12 years, who suffered from subacute otitis media and a large adenoid growth. The adenoid was removed at two sittings, under cocaine and adrenalin; after the second operation shivering occurred, the temperature mounted to 104° F., and there were spasmodic twitchings of the neck. Aspirin, gargles, and hot fomentations removed both the torticollis and the ear disease. The second patient was a boy, aged 8 years, who had adenoids, enlarged tonsils, and intermittent deafness. After operation there appeared fever, glandular enlargement in the neck, and tenderness and rigidity of the neck muscles. This all disappeared in twelve hours.

J. PORTER PARKINSON.

A case of rhino-lithiasis causing purulent middle-ear disease ('*Arch. für Ohrenheilk.*,' *vol.* LXIII, *p.* 214).—**H. Halasz** reports the case of a girl, aged 14 years, complaining of bad smell from the right side of the nose with right-sided hyperlacrymation and sharp pains in the frontal region. For the last two months patient also had purulent discharge from the right ear. This was preceded by severe earache of several days' duration. The cause of the fœtor was found to be a rhinolith in the right nose, which had formed around a cherry-stone, and was ¾ inch long and 1½ inch thick. Removal of the stone was followed by cessation of the symptoms, and the otitis of two months' standing cleared up in a very short time.

D. O'C. Finigan.

Malignant tumours of the tonsil in children (*'Bulletin de Laryngol., Otol., et Rhinol.,' March* 31, 1905).—**Moizard, Denis, Balée** describe a case of sarcoma of the tonsil of six months' duration in a child, aged 9 years. Malignant disease of the tonsil is very rare in children, and the authors could only collect thirteen or fourteen cases published in the medical literature in France and abroad. Harold Barwell.

Congenital laryngeal stridor (*'Arch. Internat. de Laryngol., d'Otol., et de Rhinol.,' July–August*, 1905, *p.* 52).—**Prof. O. Cozzolino** (of Genoa). The author discusses the theories of the causation of this affection. The mechanical theory, that it is due to laryngeal malformation, is the oldest and most in favour, and is founded on laryngeal examinations made both during life and post-mortem. Other theories are that it is a reflex spasm due to the presence of adenoids; that it is caused by enlarged bronchial glands pressing on the vagus and exciting spasm; that it is due to paralysis of the abductors; that it is the result of compression of the trachea by a hypertrophied thymus; and that enlargement of the thyroid gland is the cause of the compression. Thomson believed in an incoordination between the inspiratory and the laryngeal muscles, similar to that which causes stammering.

The author believes that there is one distinct form, which should be clearly separated from the others, and which is due to a particular malformation of the larynx above the glottis; the epiglottis is folded on itself, and the aryteno-epiglottic folds lie close to the middle line, so that the upper aperture of the larynx is reduced to a narrow slit. This form can be readily distinguished from glottic or subglottic stenosis. Thus it is truly congenital, seldom appearing after the first week; it improves about the sixth month and nearly always disappears during the second year, and it is never in itself fatal. The bruit is "purring" in character, inspiratory, and gradually rising in pitch during inspiration; these distinguish it from subglottic stenosis. In spite of the intense stridor, there is little distress, the alæ nasi scarcely move, there is little retraction of the thorax, and no cyanosis.

Harold Barwell.

Surgery.

Wide cleft of the palate (*'Brit. Med. Journ.,' July* 8, 1905).—**G. B. Ferguson** describes the case of a newly-born child with a hare lip about two and a half inches wide and a complete cleft of the palate of nearly the same extent. This patient was treated by the Brophy method. Wires were passed from one maxilla to the other, and three weeks later the bones were approximated after being cut through just below the infra-orbital foramen. This closed the cleft except for the pre-maxillary bone, which at a still later period was partly cut through at its attached edge and pushed backwards; the remnant of the cleft was afterwards easily closed by Lane's method. Some months later the harelip was successfully operated upon, and ultimate result was good. The child unfortunately died some time later from an attack of gastro-enteritis. Mr. Ferguson speaks well of Brophy's operation, and says that the bleeding and shock are comparatively slight. A very good description of Brophy's operation is to be found in Mr. Edmund Owen's recently published work on 'Cleft Palate and Hare Lip.'

P. Lockhart Mummery.

The treatment of rotary lateral curvature of the spine by exercises ('*Medical News*,' *June* 3, 1905).—**Leonard W. Ely** of New York, in a paper on this subject, lays particular stress upon the great importance, if a really satisfactory result is to be obtained, of teaching the patient to stand and walk correctly rather than trusting in elaborate exercises and the use of apparatus. He advocates the use of well-fitting plaster jackets during school hours and periods of inactivity in young subjects. He says that the main objects to be attained are to make the spine flexible, to strengthen the back muscles, and to teach the patient control over them. He describes various simple but efficient exercises, and puts most trust in getting the patient carefully taught to always walk and stand correctly. P. Lockhart Mummery.

Congenital dislocation of the hip-joint ('*Lancet*,' *August* 12, 1905). —**Jackson Clarke** read a paper on this subject at the Leicester meeting of the B. M. A. He considered that this affection was now curable. When the patient was of suitable age the Lorenz method of treatment could be safely carried out. The patient invariably improved in general health and strength during the treatment. The profession in this country had not yet appreciated the scientific basis and technical details of the treatment. Two years must elapse before the final results could be considered. From the experience of 17 cases treated by the manipulative method during the last two and a half years he considered that the open operation was no longer justifiable, and that cases of double dislocation were as well suited to the method as cases of unilateral dislocation.

James Burnet (Edinburgh).

Surgical emphysema resulting from a fall ('*Lancet*,' *July* 22, 1905).—**Russell E. Palmer** records a case in which the patient, a boy, aged 6 years, was taken to the Buckinghamshire Hospital with a history of a sudden fall over a step ten minutes previously. His neck was very much swollen, the swelling extending up both sides of the face and involving the lower right eyelid, which could scarcely be opened. The respirations were 30, the pulse 100, and the colour was good. There was no wound of the skin, the nose was uninjured, and there was no air in the pleural cavities. The swelling was soft, doughy, and gave the characteristic crepitus of air in the subcutaneous tissues. The boy complained at the time of the accident of pain over the trachea, but afterwards he said he felt no pain. His voice, however was slightly husky, but he coughed very little and did not expectorate any mucus or blood. The emphysema extended rapidly and spread to the other eyelids, the entire chest wall, and part of the abdomen. The child was kept in bed, no special treatment being adopted. On the evening of the second day he developed a temperature of 104° F., but by the following morning it was normal again. The air was rapidly absorbed, and the patient was quite well at the end of a week.

James Burnet (Edinburgh).

Review of Book.

Recherches Cliniques et Thérapeutiques sur L'Epilepsie, L'Hystérie et L'Idiotée. Compte-Rendu du service des enfants, idiots, épileptiques, et arrièrées de Bicêtre pendant l'année, 1903, vol. xxiv. Par Bourneville. Félix Alcan, 108, Boulevard Street, Germain, 1904.

This is the twenty-fourth Annual Report on mentally defective children issued from the Bicêtre by Bourneville. The first 184 pages constitute the first part of the volume, and are, as usual, devoted to internal details of the institution. The administration is described and a complete picture drawn of the various medico-pedagogic methods by which the children are trained. These methods are most interesting to read about, but must involve an enormous amount of labour and patience on the part of those employing them. Still, the results attained appear to justify fully the trouble expended. It is instructive to note that, as before, personal cleanliness, and especially care of the evacuations, is much more readily instilled than

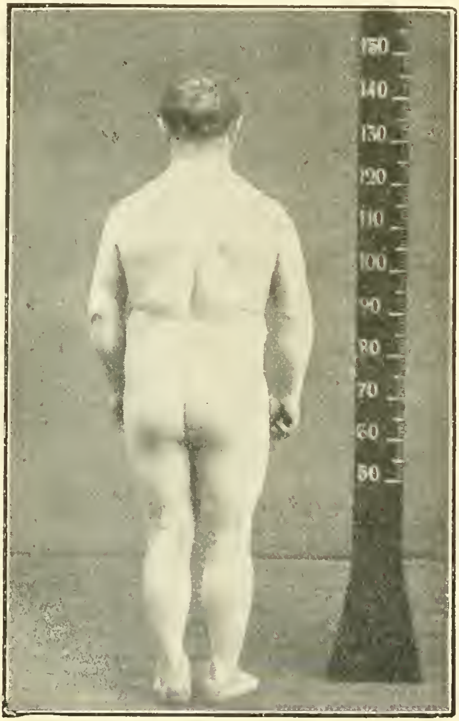

Fig. 1.—Dwarfism with obesity. Man aged 24 years.

moral teachings on such subjects as masturbation. A special chapter is devoted to education of speech, about which an elaborate programme is given.

The second part comprises sixteen monographs on medical studies undertaken during the year by Bourneville and his assistants. The first monograph, in 183 pages, deals with the subject of the different varieties of dwarfism. The most important section of this is the one treating of Mongolism, on which Bourneville has done so much work previously. First

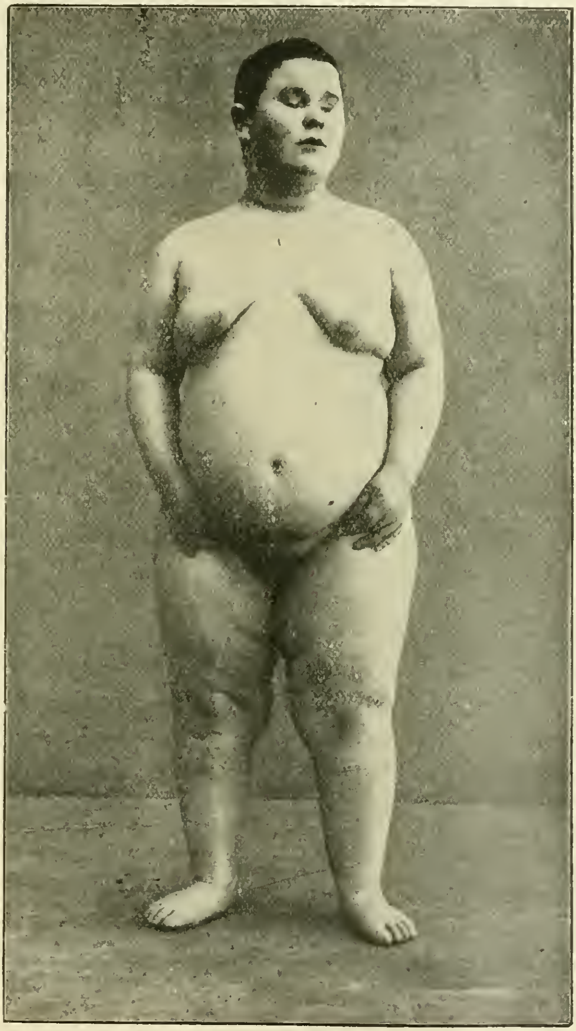

FIG. 2.—Dwarfism with obesity. Girl aged 14 years; height 4 feet 4 inches.

a typical case is described fully and then are given details of the histological examination of four cases which had died at the Bicêtre. From this the conclusion is arrived at that the initial lesion was a low form of meningo-encephalitis, having many distinctive features in its character and distribution. An intense sclerosing thyroiditis was found in all the cases, a circumstance which has confirmed Bourneville in his practice of giving thyroid extract to such patients. However, neither the marked improvement during life nor the thyroid changes after death that he describes

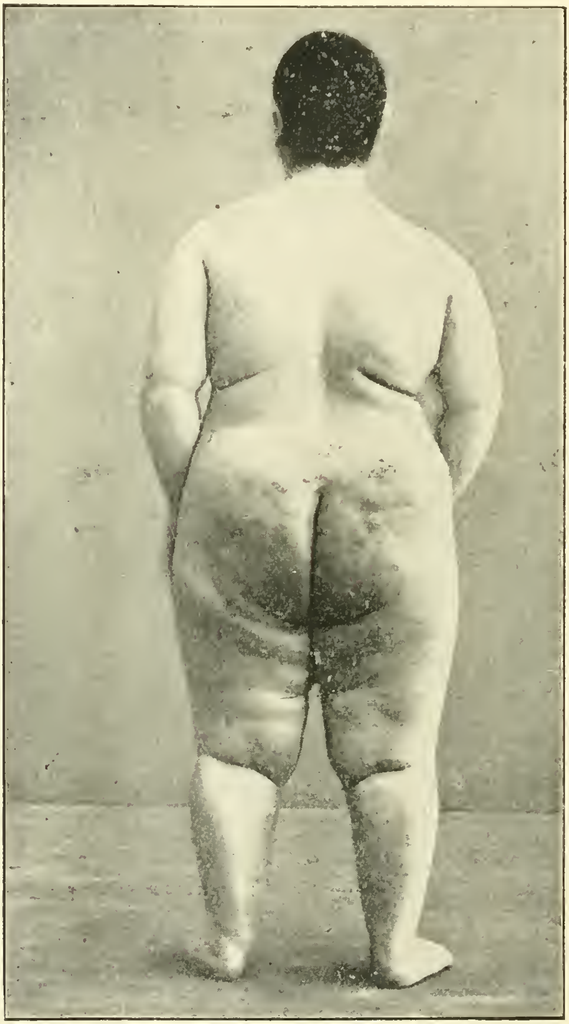

Fig. 3.—Dwarfism with obesity. Girl aged 14 years; height 4 feet 4 inches.

have been confirmed by physicians in this country. Persistence of the metopic suture is also insisted on as a constant finding, again in spite of foreign experience.

In the next article a case of congenital idiocy with microcephaly is described fully. A partial premature synostosis of the cranial bones was found after death, a rare circumstance in this condition. Meningeal changes observed suggested again some low inflammation as a cause. There are three valuable articles on infantile hemiplegia, and statistics are given relating to fifty-one cases now in the hospital. One of these articles was published originally in the 'Archives de Neurologie,' and is abstracted in the present number of THE BRITISH JOURNAL OF CHILDREN'S DISEASES. Plates of the brain of the case there described accompany this review. Three articles deal with the etiological side of idiocy and epilepsy, one

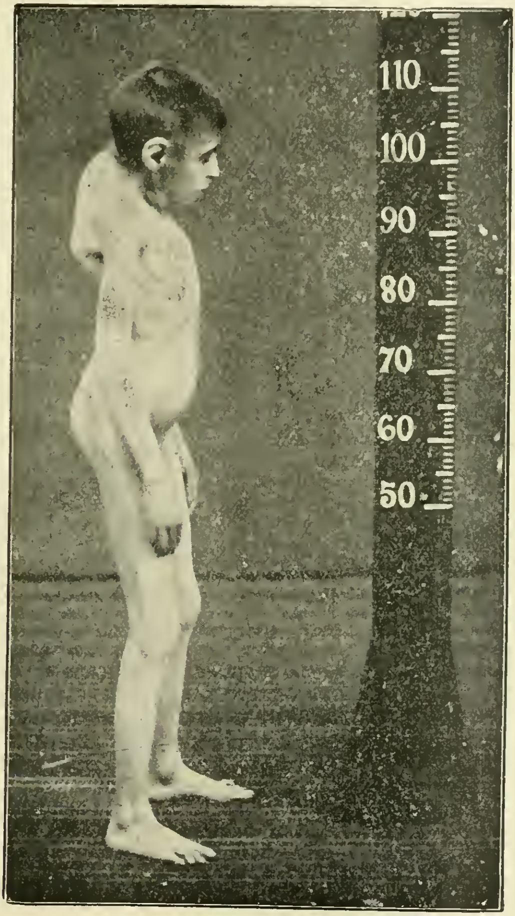

FIG. 4.—A rickety dwarf. Girl aged 17 years; height 4 feet 3 inches.

with unhealthy trades, one with alcoholism in the parents, and one with the *rôle* played of consanguinity. We are afraid that the assumptions and fallacies involved in Bourneville's methods in this connection completely vitiate the value of his results, but we have no space here to deal with the subject.

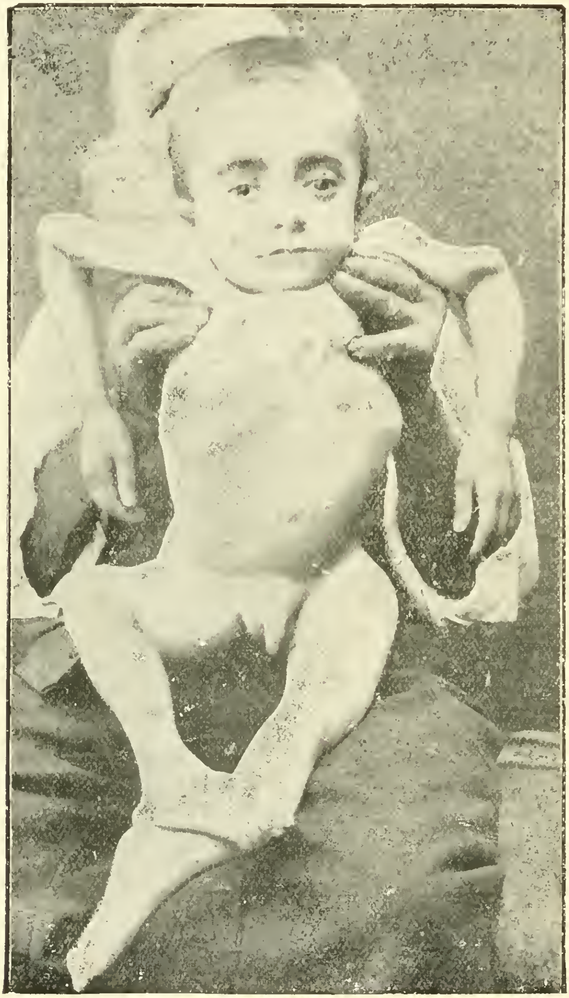

FIG. 5.—A rickety dwarf.

Paul Boncour contributes an important article on the cranial modifications following on unilateral cerebral atrophies, and describes carefully features that have been alluded to by Bourneville in former cases. Statistics of no great interest are given in two other articles on the subjects of persistence of the metopic suture and thymus gland in epileptics and idiots.

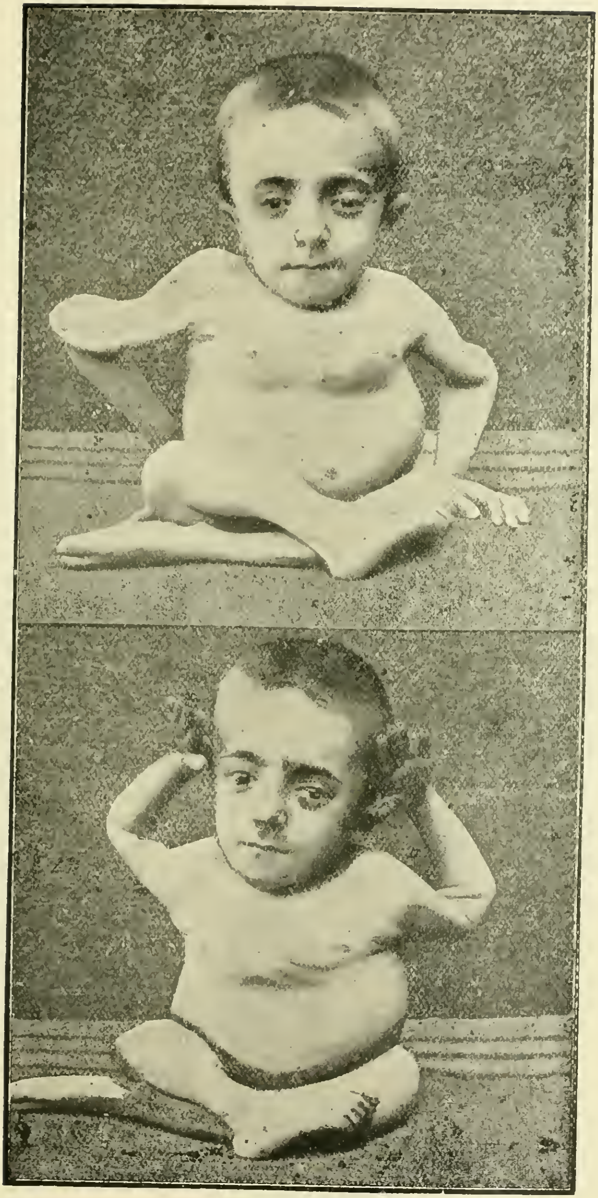

Fig. 6.—A rickety dwarf.

A valuable article by Bourneville and Julien Noir on congenital hydrocephaly is worthy of special notice. The case is described with the minutest attention to detail. There was atrophy of the right cerebral and left cerebellar hemisphere. An hypothesis as to the origin of porencephaly is put forth.

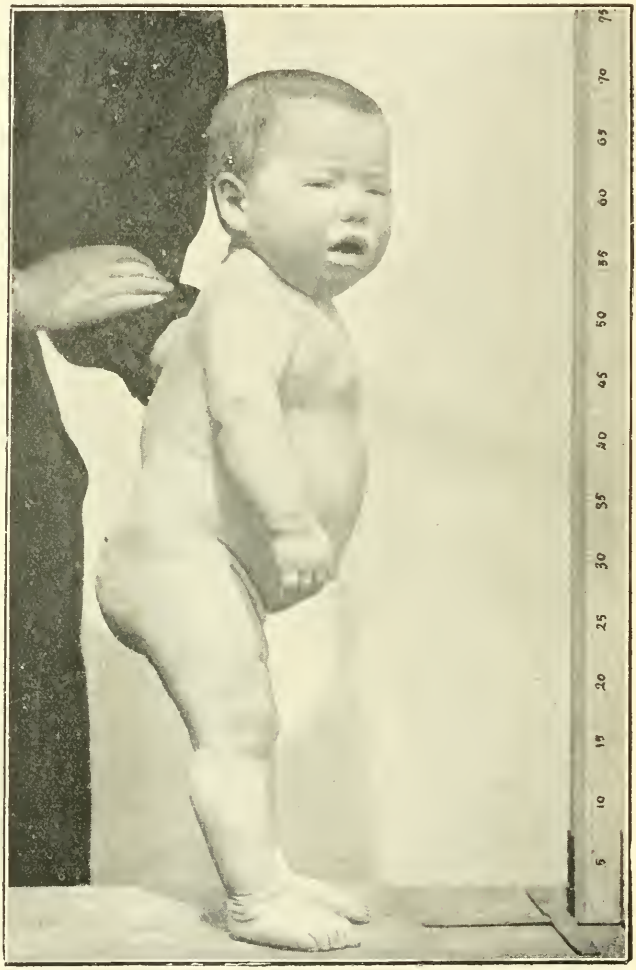

Fig. 7.—Cretinism. Girl aged 4½ years.

The volume is profusely illustrated, and on the whole worthily maintains its author's reputation.

A. Ernest Jones.

THE
BRITISH JOURNAL
OF
CHILDREN'S DISEASES.

VOL. II. DECEMBER, 1905. No. 12.

Original Articles.

CONGENITAL UMBILICAL HERNIA.

By CHARLES GREENE CUMSTON, M.D.,

Surgeon to the Floating Hospital for Children; Honorary Member of the Surgical Society of Belgium; Ex-Vice-President of the American Association of Obstetricians and Gynæcologists, etc., Boston, Mass.

(*Continued from page* 490.)

AT this time the omphalo-mesenteric duct becomes detached and obliterates, and a small rudimentary *débris* of this duct is still found suspended to the small intestine, although the remainder of it has completely disappeared. Under normal conditions the omphalo-mesenteric duct gives way to the traction exercised from both sides upon it; it becomes thin and finally breaks. Now, if one is dealing with a very thick cord, it retains the intestine outside of the umbilicus beyond the normal time, and an umbilical hernia forms. If the intestinal loops have already entered the abdominal cavity, without any separation of the duct having taken place, as a consequence a diverticulum is formed.

We now come to the consideration of fœtal hernia arising in an umbilicus already formed and possessed of a peritoneal sac. This type is produced by the same mechanism that arises in umbilical hernia of children and adults. The theory of arrested development of explaining the formation of congenital umbilical hernia in the embryonal period was given to the medical world by Meckel, and has been generally admitted, but before this theory others had been promulgated, but need not detain us here to any great extent. Oken admits that congenital umbilical hernia is not the result of a protrusion of the abdominal contents, but from an insufficient retreat of the intestinal loops primarily situated in the umbilical cord, and he believed to have found in their relaxation the cause by which the gut did not enter into the abdominal cavity. According to his way of thinking, a mother, weakened by disease, might transmit this weakness to the fœtus, whose intestines would be lacking the necessary force to enter into the abdomen. Tudichum believed that this process arose from a relaxed mesentery, while Lassus thought it due to an increase in the size of the liver, but if this were the case, the liver should be found enlarged in all anomalies of this kind, a thing which does not occur. According to the former authority the various causes may become combined, and the intestine, filled with meconium, can, by its weight, prevent the occlusion of the abdominal integuments. Then, again, the position of the embryo might have a certain influence. According to Buschan there is no one exclusive cause. Ahlfeld long ago pointed out, describing a large number of cases, that it was nearly always the same part of the intestine which was involved, and especially the lower part of the ileum, cæcum, and ascending colon, with the different portions of the mesentery.

Now, since embryology teaches that this very portion of the intestine is at a certain epoch of development situated outside of the abdominal cleft, and that it only enters into the abdominal cavity after atrophy of the omphalo-mesenteric duct has taken place, Ahlfeld thought that the patency of the intestinal canal, with the umbilical vesicle beyond the normal time, gave rise to these malformations, and to give weight to this explanation he quoted cases in which the abnormal presence of the omphalo-mesenteric duct was noted. I have already pointed out that this persistency of the omphalo-mesenteric duct is, in point of fact, quite frequently the cause of embryonal umbilical hernia, but I believe that Ahlfeld is in error in believing that it is the only process arising in these malformations. Chadwick explains the formation of this hernia by a defective development of the abdominal wall, but only in a certain number of instances. He says, however, that if the size of the abdominal organ is too great to be easily surrounded by the abdominal walls at the time when the latter should normally close, the intra-abdominal pressure will prevent the return within the abdomen of a certain number of intestinal coils which up to that time have remained within the cord.

We find another cause for the formation of hernia in the persistency of the umbilical vesicle, which in these cases draws that part of the intestine to which it is attached out of the ring. Duplay some time ago remarked that the peritoneum develops like the abdominal walls, and mentioned the importance of this fact, because every time that there is a defect, or better still an arrested development of the abdominal wall, this arrest must be produced to the same extent in all the layers entering into the formation of these structures, exactly as if they were formed by a single layer. Consequently the membrane covering the protruding viscera cannot be the peritoneum in cases in which the process arises from an arrested development. The absence or the presence of peritoneum forming the sac of the congenital umbilical hernia will consequently allow one to establish the distinction existing between these two varieties of congenital umbilical hernia—those arising during the embryonal period, whose immediate envelope is the primary membrane of Rathke, and those of the fœtal period which develop when the ventral plates have become united to form the umbilicus, and consequently where the peritoneum should exist, forming the hernial sac. The hernias of this latter variety must consequently form after the third month of intra-uterine life. Lindfors does not acquiesce in this theory and, according to him, the peritoneum always forms the sac of embryonal hernia, this being because he does not distinguish the lower uniting membrane of Rathke from the parietal peritoneum. This only amounts to a simple question of words.

Generally speaking, the diagnosis of congenital umbilical hernia is an easy matter, and naturally imposes itself upon one when in presence of eventrations or a very large hernia, and I have pointed out the external characters which this surgical malady presents. The transparency of the envelope greatly facilitates the diagnosis. The variation in the size of the tumour when the child cries or struggles is also a most important diagnostic element. But, although the diagnosis is generally easy, it may occasionally happen that the size of the hernia is so small that it is passed by unnoticed; and so great authorities as Sabatier and Dupuytren mention a certain number of cases in which a loop of intestine or a diverticulum was included in the ligature of the cord, and, for this reason, it is always prudent not to apply the ligature too near the umbilicus. In point of fact, I would point out to obstetricians that it is always well to determine whether or not a hernia exists before tying the cord, and this is readily discovered if one seizes the base of the cord between two fingers and by pressure ascertaining whether or not any organ is found to enter into the abdominal cavity. Or again, in order to be still surer, one may wait for the child to cry, because, if the intestine should be adherent and cannot be reduced, a substance foreign to the elements of the cord may be felt between the fingers. In some cases the intestine or the diverticulum may extend quite a distance into the cord, and in 1850 Stanley described a case where the midwife, who nevertheless had ligated the cord quite a distance from the umbilicus, included the intestine in the ligature, so that a fæcal fistula occurred on the fourth day, and the child died a week later from this unfortunate occurrence.

The diagnosis of the elements forming the contents in congenital umbilical hernia may be most difficult or even impossible, but the transparency of the envelopes will frequently allow one to note *de visu* the organs contained in the sac; but for this it is necessary to see the child immediately after birth, because the envelopes become rapidly opaque. Percussion will allow one to differentiate the intestine from the liver, if the intestine alone forms the contents, while, when the liver is present, dulness will be elicited. If both organs form the contents, dulness will be detected in certain points. According to Meckel, when the liver forms part of the contents, the hernia will take on a bluish-red hue, and, if it is compressed, the presence of a solid body will be discovered, which prevents the apposition of the abdominal walls. Duplay pointed out that considerable importance must be attached to the insertion of the cord when one is desirous of ascertaining whether or not the liver forms part of the contents of hernias partially or completely reducible. In this case the cord will be found situated on the left side of the tumour, which will easily be discovered if one recalls the relationship of the umbilical vein with the liver. The differential diagnosis with urinary omphalocele must also be made. This latter process will be diagnosticated, because it is fluctuating, transparent, and seated at the base of the cord. In these cases, as there is frequently a defective formation of the urethra, it is accompanied by complete or incomplete retention of urine.

Thanks to the progress realised in the treatment of congenital umbilical hernia, the prognosis of this condition has become more favourable than it was a few years ago. Duplay estimated that the prognosis essentially differed according to the variety. Umbilical hernia arising during the fœtal period is not serious, but the same cannot be said of the process when it occurs during the embryonal period. If they are of a medium size, the prognosis is always very serious; however, it is at the present time known that this gravity was greatly exaggerated by the older physicians. According to the mechanism by which spontaneous cure takes place, it may be concluded that the possibility of reduction is an indispensable condition. Irreducible hernia, on the contrary, is usually incurable. As Duplay has said, it is evident that the prognosis will vary with each type and that the presumption of the viability of newly-born babes will be in inverse relation to the extent of the umbilical eventration and in direct relation to the duration of gestation.

In making the prognosis one should also take into consideration those malformations which so frequently co-exist with the umbilical process, because the former may be such as to be incompatible with life.

As late as 1856 Lauth made the statement that hernias of the cord were almost always beyond the resources of surgery, and that only a palliative treatment would prolong the life for a few days in children born with this defect, although in times gone by there had been cases of spontaneous cure reported, although exceptionally, in instances where the hernia was of small size. In 1866 Duplay, in the work already alluded to, says that he considers the active measures for the immediate reduction of the contents as defective, and that in many cases this brusque reduction would be impossible, for the simple reason that the abdominal cavity is not sufficiently large to contain the intestinal mass developing in the cord. For these reasons he is of the opinion that one should simply support the umbilical region with a bandage, and by short manœuvres to facilitate the reduction of the contents by enlarging little by little the abdominal cavity. In 1877 Orliac insisted upon the importance of preventing the falling off of the cord as long as possible, in order to allow the abdominal cavity to undergo that development which is necessary in order to receive the viscera forming the contents of the sac, as well as to aid Nature's efforts in allowing the underlying granular membrane the time for forming. He also points out that this membrane is not alone a protection for the viscera, but that, under the influence of its retraction which later on takes place, the umbilical ring will decrease in dimensions. He concludes that if the hernia is reducible the surgeon should limit himself to favouring Nature's action, which, in many instances, will effect a cure. As an operative procedure he advises, after having incised the umbilical ring and reducing the intestinal mass, to unite the wound with sutures, or, better still, to simply ligate the walls of the hernia, supported by appropriate dressings. According to his way of thinking irreducible hernias containing the entire liver are incompatible with life. He also pretends that, if the hernia is somewhat large, reduction should not be tried, because Nature does not proceed in this way, and, on the other hand, since the abdominal cavity cannot receive the viscera, which have never been contained within it, one is liable to produce dyspnœa, syncope, and the formation of hernia through other openings.

As may be seen, Orliac and the majority of other writers of his time were content, in the larger number of cases, to employ an expectant treatment, which they considered more prudent. They were still under the influence of the opinion held before them by authorities such as Malgaigne, Albinus, Ruysch, Hager, and Soennering, who considered this affection as incurable, and did not proceed surgically according to the precepts of the illustrious Ambroise Paré.

The numerous reported instances of spontaneous cure in former times are, for the most part, only relative, and should not be regarded as real cures merely because the child lived. The hernia was not cured, and as far as the final result of the process of granulation is concerned, from the standpoint of the quality of the occlusion of the 'hernial orifice, especially in instances of somewhat large hernia, the records leave much to be desired. Generally there is an insufficiency of detail relative to the nature and degree of the cure. Whether or not the process simply consisted in a covering over of the hernia by skin, with a reduction in its size, or whether it was a complete reduction with a permanent occlusion of the hernial orifice are facts which are not clearly shown in the reported cases. Fleischmann, however, expressly states that, after the cure of a case of hernia described by him, a large tumefaction existed, through which the intestinal coils could be felt, so that the wearing of a bandage was absolutely necessary. The autopsy of children dying shortly after a so-called cure had been accomplished showed that a marked diastasis of the recti muscles existed, and it is evident that a properly conducted operation would have favourably modified this condition of the abdominal walls. From what has been said it is not a difficult matter to come to a conclusion relative to the efficacy of expectant treatment.

A number of methods have been proposed for the radical cure of congenital umbilical hernia, the first which we will mention being that of Dorhn, whose technique was as follows: At the apex of the hernia, at a point where quite a large quantity of Wharton's jelly was to be found, he raised a portion of the amnios with rat-tooth forceps and cut it with small scissors. He then separated the amnion from the peritoneum as he approached the umbilicus, which was all the easier to accōmplish from the fact that Wharton's jelly is more abundant between these two membranes. The vessels were ligated with catgut, and afterwards the intestine was reduced; then the peritoneal sac, with its internal borders united in a longitudinal direction at the level of the umbilical orifice, was also sutured with catgut. That portion of the peritoneum situated above the ligature was then resected. After having freshened the borders of the abdominal integuments, they were united in a longitudinal direction, excepting at the lower angle, where the ligated vessels were lying. Olshausen circumscribed the hernial orifice by an oval incision made at a very short distance from the cutaneous borders. On the skin he isolated the amnion from the parietal peritoneum, and, seizing the cutaneous borders with forceps, he drew them towards the middle of the hernial orifice. The umbilical vessels were cut and ligated, the oval wound of the abdominal integuments was closed after reduction of the contents, with deep and superficial sutures. From this it will be seen that Olshausen only removed the external hernial envelope and sutured the abdominal integuments over the reduced peritoneal hernial sac. According to his way of thinking, the great advantage of this method is the preservation of the peritoneum, because, in cases where the wound might break down, an occurrence which is not infrequent, he would be sure of healing by granulations which would form from the abdominal integuments and would soon fill up the space.

The technique followed by Carl Breus consists in a reduction of the intestine, the opening and removal of the hernial sac, after a provisional occlusion of the hernial orifice, and ligature. After disinfection of the field of operation he endeavours to reduce the contents within the abdominal cavity by a slight but increasing pressure proceeding from the apex of the hernia towards its base. When the reduction has been accomplished he endeavours, either by palpation of the sac, or by utilising its transparency, to assure himself that it is perfectly empty, and, in order to avoid protrusion of the reduced viscera, a clamp is placed on the skin surrounding the base of the sac. One must be careful that the borders of the hernial orifice are applied against each other by the clamp as accurately as possible. After thus having obtained a provisory occlusion he advises opening the sac carefully in a longitudinal direction, commencing at the apex and extending to the base, in order to be able to assure oneself by a direct examination of its interior that the reduction of the contents has been complete. When this is not the case—if, for example, a coil of intestine has remained in the sac—it must be reduced before proceeding. If adhesions exist, the simplest way is to incise the peritoneal sac at the point of adhesion, to isolate the amnion, and afterwards reduce the intestine with the adherent part of the sac. Once the reduction is assured, the sac is removed and the ligatures are applied immediately below the clamp. The two ends of a long and strong silk ligature are threaded on two ordinary needles; the needles are introduced into the tissues at a distance of about one centimetre. The ligature is double, so as to be able to ligate the tissues under the clamp in three parts. If the hernial orifice is of large diameter, a larger number of ligatures will be required. After having carefully tied the ligatures the clamp is removed and an antiseptic dressing applied.

The reproach that has been addressed to this method is the insufficiency of the occlusion and the slight solidity of the cicatrix, but experience has disproved this. The tissue of the stump which has been ligated becomes eliminated, granulations form, which favour a solid union of connective tissue between the integuments over the surface of elimination; and the integuments, having been brought together by sutures, are held intimately approximated, thus preventing any gaping. This technique, however, presents one disadvantage, namely, that it requires more from the abdominal walls than suture after freshening. In those cases where, after reduction, the intra-abdominal tension is somewhat increased, the clamps should, at least partially, include the abdominal skin in their grasp, because if they were merely applied on the peritoneal amniotic part, they would tear it. The tissues included between the bites of the forceps are lost; they undergo necrosis, because the ligatures are placed below the clamp.

Herniotomy, without opening the sac, first advised by J. L. Petit, was reinstated in 1874 by Colson. In reality, however, this procedure is merely Olshausen's extra-peritoneal method. In cases where adhesions are extensive, particularly when the liver is adherent to the hernial sac, it perhaps may have some good points, but, nevertheless, the incision of the sac, followed by its extirpation, is certainly the only proper method to follow in these days of aseptic surgery. The hernial orifice is transformed into an abdominal wound. In his technique Dorhn freshened the borders of the ring, but, under these circumstances, the closure of the latter by sutures left two depressions above and below on account of the round shape of the ring, and in order to avoid this result Berger proposed incising a small portion of the linea alba above and below the umbilicus. Le Dentu resected above and below the orifice, two small triangles with their base at the ring. By this device the wound is made an elongated oval, and the operation is certainly more efficacious without being rendered more serious.

In order to assure a more perfect occlusion, or to modify the various manners of closing the operative wound, Geisel, Polaillon, and Reverdin sutured the ring and the neck of the sac simultaneously, while Sien was one of the first to advise the separate suture of the neck and the ring. Lawson Tait advised, by making an incision parallel to the walls, to make two flaps, one being formed by the fibrous layer adherent to the peritoneum, and the other by the fibrous layer adherent to the skin, and these two surfaces were brought together with the hope of obtaining a solid cicatricial wall. Lucas-Championnière insists upon the necessity of doing away with the peritoneal infundibulum, like in any other hernia. He closes the sac by chain ligatures after having executed traction on the neck so as to do away with all depression. The persistency of a *cul de sac* of the peritoneum is merely an opportunity given for the formation of a new hernia, and it is for this reason that he draws the neck of the sac out as far as possible and sutures the peritoneum as high up as can be accomplished. Wylie calls special attention to the necessity of exactly approximating the deep aponeurotic layer in order to avoid a recurrence, and the same may be said of the exact approximation of the peritoneum. However, the majority of operators seem to be entirely ignorant of the fact that the thick fascia which unites the recti and forms their sheath, composing the linea alba, is in reality the tendon of the abdominal muscles, and it is this fascia and not the recti which gives the abdominal walls their resistance in the transversal direction. The recti are easily thrown outwards by any force tending to separate them. On the other hand, Condamin proposed opening the sheath of the recti at the same time that the umbilicus was resected, the technique being as follows: After isolating the sac the upper part is carefully seized with dissecting forceps, and the sac is drawn up away from the viscera, and then with the knife a small incision is made into it near the point of the forceps. The opening is then enlarged, and guiding the scissors on an index finger introduced into the interior of the sac, it is opened up without any danger of wounding the contents. After reduction of the contents, the adhesions having been broken up if any exist, the borders are freshened and to accomplish this the left index finger is introduced into the ring in order to destroy any adhesions which may be present. The finger may be retained in the abdomen and curved in such a way that the ring and the linea alba above and below it can be incised so as to have a musculo-aponeurotic opening. The union of these two sheaths should form, after closing the abdominal cavity, a common sheath for the recti. Before closing the abdominal wall the peritoneum is sutured according to Doyen's method for intestinal suture. The second layer should include the recti and the aponeuroses; the posterior aponeurosis being always somewhat covered by the muscle, the needle should be inserted at quite a distance from the freshened borders in order to be sure of including it in the suture; the skin is closed with interrupted sutures of silver wire. The patient must naturally wear an abdominal belt in order to prevent any mishap from coughing, straining, etc. Later on, the originator of this technique introduced a slight change which he considered important. Instead of closing the peritoneum alone, he includes the deep layer of aponeurosis with a running suture, care being taken to make a good sero-serous approximation. If this method is followed Condamin believes that the peritoneum does not tear and the occlusion is consequently more perfect. The second layer of sutures includes the anterior layer of aponeurosis and the recti, while the skin is closed as usual. Without doubt in this procedure the mechanical obliteration is more perfect than in the others, because the parts are united in three layers.

Quénu has described a technique which he calls the musculo-aponeurotic mattress and is quite similar to Condamin's method. After closing the peritoneum the posterior layer of aponeurosis is sutured and then a second layer of sutures unites the recti, while a third suture closes the superficial aponeurosis of these muscles.

Duplay prefers a through-and-through suture and, having employed it considerably, has no fault to find. After having resected the thin skin forming the umbilical cicatrix, he inserts through-and-through sutures, including the skin in cases where the hernia is small. When the hernia is of fairly large dimensions he excises the umbilical ring and closes this with a through-and-through suture, not including the skin, the latter being closed with a separate layer. Personally, I am inclined to resect as little as possible in cases of large congenital eventrations, and if there is any difficulty in approximating the freshened borders of the wound, one should not hesitate to resort to free lateral dissection to quite an extent which will permit the sliding over of the musculo-cutaneous layers. If, later on, secondary herniæ arise where these dissections have taken place they can always be attended to; but at birth the most urgent indication is to cover over the viscera, which are only protected by a layer of peritoneum and a badly defined granular layer, with a cutaneous or a musculo-cutaneous surface.

Dauriac's modified technique, published in 1894, is as follows: Only one half of each muscle is incised and it is divided longitudinally into two equal bands. The external band in each muscle is destined to remain intact and to assure muscular continuity. The internal band is incised with a knife transversely, the incision being carried up to the vertical incision in each muscle. This forms two muscular flaps, which are crossed and sutured, the upper left flap being united to the lower right one and reciprocally. When dealing with congenital umbilical hernia this authority prefers total crossing of the recti to that of partial crossing.

Such are the principal methods which have been advised for the treatment of congenital umbilical hernia. As to the method to employ for the radical cure, I do not believe that any one can be considered the best, and it is well to make a selection among the various techniques according to the given case. In reference to Mayo's method, which in the adult is, according to my way of thinking, superior to any other, I have done this operation eighteen times without recurrence; it has been purposely not alluded to when discussing the radical cure of congenital hernia, because it cannot be readily applied with any chance of success on account of the necessary resection of the tissues which it involves.

Generally speaking, simple laparotomy, with extirpation of the sac and suture of the freshened borders of the wound, will be sufficient in a large majority of cases. As to the use of several layers of buried sutures, I can say from practical experience that, although they may be practised successfully in the adult, they are far from being easy in newly-born children.

The question now arises as to when a congenital umbilical hernia should be operated on, and, in reply to this, I would say that it should be done as soon as possible after birth, because desiccation of the sac will soon become the starting-point of inflammatory attacks in the viscera. If the operation is carried out carefully and without undue loss of time, babies will stand the operative shock and anæsthesia well.

ON SOME OF THE DISEASES AND INJURIES OF THE EYE PECULIAR TO CHILDREN.*

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(*Continued from page* 502.)

(3) *Amaurosis following prolonged blepharospasm.*—That amaurosis may now and then follow long-continued intolerance of light and spasm of the eyelids in children suffering from phlyctenular ophthalmia is an observation that did not escape the attention of William Mackenzie. Writing in the year 1854 ('Practical Treatise on the Diseases of the Eye,' fourth edition, p. 486), that acute observer mentioned two cases of the kind, although apparently he was not aware that the blindness was of passing nature. The condition, which to be sure is very rare, may complicate blepharospasm in young children, irrespective of the cause of the latter. As soon as the eyes can be spontaneously opened, the child is found to be unable to recognise objects once quite familiar to him. The pupils show no deviation from the normal, and there are no changes in the eye to account for the blindness. Sight is slowly regained in the course of several weeks, and during that period the child's general intelligence is duller than it was before the eyes got bad.

The following is a typical example of this rare condition :

(24) Emily O'D—, aged 3 years, was brought to the Evelina Hospital on October the 20th, 1899, suffering from bilateral interstitial keratitis of six weeks' duration. Her brother, aged 6 years, was under my care for a similar ailment. There had been three children born dead before the birth of my two patients. The keratitis in both cases was associated with an unusual amount of photophobia. Despite treatment, Emily's photophobia became so pronounced that on December the 29th, 1899, immersion was tried. On February the 23rd, 1900, photophobia still continuing, the lids were ordered to be opened with retractors for some minutes daily at the hospital. Three days later (February the 26th) the nurse who was carrying out this method of treatment discovered that Emily O'D— could see nothing, an observation afterwards amply confirmed by the child's mother. March the 23rd, 1900—The child, who now opens her eyes pretty well, is stated to be unable to recognise objects once familiar to her. She seems dull-witted. On March the 27th, however, the child noticed a bright tin on the kitchen mantelpiece and exclaimed, "Hark at it shining!" During the next three days the child saw the fire shining, opened her eyes fairly, and ran into the street alone. April the 20th, 1900—Sight continues to improve. Child runs alone in the street and recognises common objects, as flowers,

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* A lecture delivered on July the 11th, 1905, in the post-graduate course of ophthalmology in the University of Oxford.

cups, saucers, jugs, glasses, and so forth. Both corneæ slightly cloudy, but no redness of the eyes or photophobia. Later in the history of the case the child developed bilateral dacryocystitis, associated with Staphylococcus albus and aureus in the discharge. The disease eventually yielded to treatment, specific and surgical.

To judge from the case about to be narrated, the amaurosis, the nature of which is still imperfectly understood, may be limited to one eye:

(25) A bright and talkative child, aged 2 years, developed on January the 20th, 1899, without known cause, cellulitis of the right orbit, accompanied by marked œdema of the lids, so that they could not be opened. The movements of the eyeball were abolished, and the globe itself was pushed forward and outward. The general symptoms were of a somewhat alarming character—child semi-conscious and in great pain, pulse uncountable, temperature 105° F. Three days later a deep incision was made through the upper lid into the orbit, and some pus escaped when dressing-forceps were introduced into the wound thus made. With a view to test the sight a week later (January the 30th), the lids of the affected eye were opened, the other eye being meanwhile kept covered up. As soon as this was done the child exclaimed, "Blind's down, daddy, all dark." The pupils were active, the media clear, and the ophthalmoscopic appearances normal. On another occasion when asked to see where the nurse stood, he said, "No; all dark." But when the good eye was uncovered, he at once exclaimed, "Why, there's Norah" (his nurse), who had been standing in front of him all the time. On February the 17th, the nurse noticed for the first time that the child could see her with his right eye, the other being closed. This observation was repeated the next day by asking the child what he saw in his mother's hat. "Flowers and feathers" was the correct answer to this question. It was also found that the little boy could name various objects in his night-nursery without mistake.

Leber's explanation of this singular condition, namely that it is due to cortical changes of a functional character, probably represents the truth. Broadly speaking, in such cases the child, who is always of tender age, may be said to have forgotten how to see, and before vision can be regained, he must re-educate his cortical centres.

Some Family Affections of the Eye.

Apart from conditions such as retinitis pigmentosa (with or without pigmentation of fundus) and Leber's optic neuritis or atrophy, which I shall not attempt to describe in this Lecture, there are three conditions of the eye seen in children which show a strong tendency, as it were, to run in families. They are—(1) amaurotic family idiocy; (2) progressive mental degeneration with changes in the fundi; and (3) degeneration of the cornea. The first is well known, but so far not a great amount of attention has been paid to the other two conditions.

(1) *Amaurotic family idiocy.*—In 1881 Mr. Waren Tay ('Ophth. Soc. Trans.,' vols. i and iv) described five instances of a curious condition in which characteristic changes in the fundus of the eye coincided with loss of muscular power in the neck and limbs. The five patients were derived from two families. Additional communications by Kingdon, Goldzieher, Magnus, Hirschberg, Wadsworth, and Hermann Knapp confirmed Mr. Tay's observations. In 1896 Dr. Sachs, of New York ('New York Medical Journal,' July, 1896), published an elaborate article on the disease, which he christened "amaurotic family idiocy," a name now generally adopted.

The disease, which is probably not an exceedingly rare one, affects, almost without exception, the offspring of Jewish parents. It is generally observed between the ages of 3 and 12 months in children who up to then have manifested no departures from the normal. The infant becomes apathetic, lies listlessly in his cot, and loses his sight. The ophthalmoscopic appearances are symmetrical and as striking as they are characteristic. They include (*a*) pallor of the optic discs, and (*b*) a milky-white area, having soft-looking edges and a red nucleus, which occupies the yellow spot region in each eye, and which recalls the appearances seen in embolism of the central artery of the retina. The eyes, now quite blind, roll aimlessly from side to side. Although the baby lies placidly in his bed, yet he is apt to jerk violently if a sudden noise be made. The rule is for the baby gradually to get worse, and, finally, to die, paralysed and idiotic, within a year or eighteen months after the onset of the disease. At the same time, sudden death is not unknown. As pointed out before, the affection shows a pronounced tendency to attack several children belonging to the same family.

Sachs ('Journal of Mental and Nervous Disease,' January, 1903) concludes that the morbid process affects primarily, or at least to a great extent, the entire grey matter of the brain and spinal cord. Degeneration of the white fibres of the anterior and lateral pyramidal tracts is, in all likelihood, secondary. The relative involvement of the grey and white matter, however, may vary in different patients. Syphilis has probably nothing to do with the causation of the disease.

Prognosis is unconditionally bad.

As regards treatment, Kingdon and Russell suggest that children in whom the advent of the disease is to be apprehended should be fed artificially and not on the breast. The underlying idea is that something or other in the mother's milk may be responsible for the degeneration of the nervous system.

(2) *Progressive mental degeneration, with changes in the fundi.*—There exists a small but well-marked group of cases, occurring in young children, marked by eye changes, on the one hand, and by systemic changes on the other. The former include slight pallor of the optic disc, smallness of the retinal vessels, and trivial pigmentary alterations situated chiefly in the yellow spot region of the fundus oculi. The general changes range from mere irritability and stupidity to actual idiocy.

The first reported observation with which I am acquainted was in 1897, by Dr. Rayner D. Batten, who showed at a meeting of the Ophthalmological Society two brothers, aged 14 and 21 years respectively, in whom the discs were pale, and there was an aggregation of fine stippled pigment at the macula. The condition of the fundus was similar and symmetrical in the two brothers. Mental defects, however, were absent. There was a definite history of syphilis in the parents, although the patients themselves presented no evidence of inherited disorder. In 1900 Dr. G. F. Still and Mr. Donald Gunn showed an analogous case in a child aged about 3 years. Marked muscular weakness, loss of knee-jerks, and nystagmus coincided with a grey area in the macular region of each eye. In 1902 Dr. F. E. Batten exhibited two cases in the same family, where the children were mentally defective and presented the associated fundus changes. In 1904 Professor Hirschberg published an isolated example of the affection in a young child. In the same year Mr. S. Mayou brought under the notice of the Ophthalmological Society three members of a family, aged 10, 9, and 8 years, with both sight and mind affected. The parents of these children were themselves the offspring of the union between first cousins. Further, there was a suspicion of syphilis. Mr. Mayou summed up the chief points in his cases as follows : (1) A syphilitic history in the parents, but no other evidence of congenital syphilis in the children ; (2) the simultaneous onset of the ocular and mental condition, generally between the ages of 5 and 14 years ; (3) the loss of central vision ; and (4) the typical appearance of the macula.

Additional cases of this type have been described by Dr. Robert Hutchison and by myself. In Hutchison's case, which occurred in a child, aged 4 years, an elder brother, aged 6 years, was completely imbecile.*

The symptom-complex of this type may be constructed somewhat as follows : A child, usually about the age of 5 or 6 years, who has previously been of normal development, perhaps after an attack of measles or other childish ailment, becomes irritable and subject to fits of temper, and grows dull mentally—"unteachable," as it were. He may develop spasticity of the legs, and exhibit more or less inco-ordination. The knee-jerks may be difficult to elicit or actually absent, and in some of the reported cases plantar stimulation has tended to give an extensor response (Babinski's sign). The sight is noticed to be defective, and the child looks at objects held in front of him sideways, thus manifesting defect in his powers of central vision. The general examination of such a patient shows that he is very backward and extremely dull and often extremely timid, so that he is apt to burst into tears almost without provocation. The reaction of the pupils, which are apt to be moderately dilated, is defective, and nystagmus or defects in the movements of the eyes, as in a case of my own to be related immediately, may be present. When the ophthalmoscope is used, slight pallor of the optic disc is found, the retinal vessels may be somewhat small—"on the small side" in hospital slang—and the yellow spot region shows slight disturbances, characterised by irregular aggregation of retinal pigment—a slight form of choroido-retinitis, in fact. The pigmentary disturbances, however, need not be limited to the macula, but may affect the central part of the fundus, and perhaps an even wider area, but they are never, so far as I know, pronounced at the periphery, as is the case in the ordinary choroiditis of hereditary syphilis.

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* A case of Dr. Kauffmann's ('Ophthalmoscope,' September, 1905) may belong to the same category.

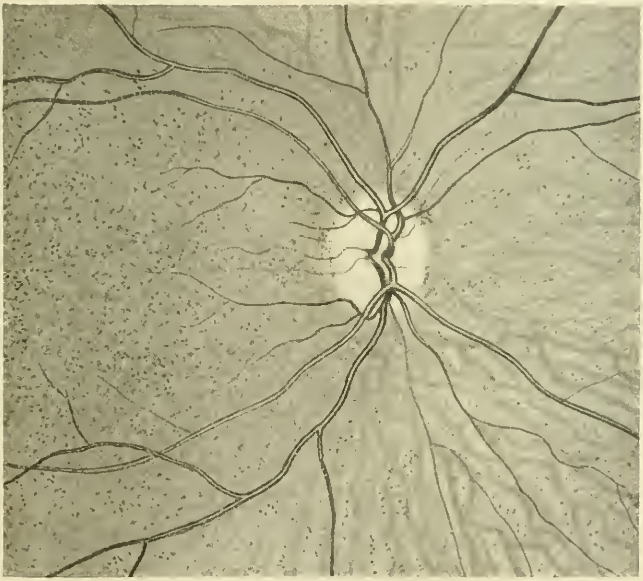
There is no tendency in this affection, as in amaurotic family idiocy, to attack Jewish children almost exclusively.

The disease slowly becomes worse, and culminates in total central blindness and in complete imbecility. But while this appears to be the usual outcome, yet in rare instances, as in a case of my own, to be next described, improvement may take place under treatment:

(26) Albert B—, aged 7½ years, was first seen at the North-Eastern Hospital for Children on May the 19th, 1904. He was the only child. His parents were not related by blood-ties. They had been married for nine years, and there had been no miscarriages or stillbirths. According to the history given, Albert had been a bright lad until about twelve months before he fell under my notice, but then his sight began to fail, he became very nervous and intensely stupid, and his memory failed, so much that he had to be taken away from school. He had suffered from bronchitis, German measles, and influenza at 4½ years, from measles at 5 years, from chickenpox shortly afterwards, and finally from mumps at 6½ years. *Upon examination*—The child is noticed to stare about him in a fixed and sightless sort of way. He can scarcely raise his eyes above the horizontal plane, and lateral movements, also, are limited. Some night-blindness exists. Slight pigmentary changes are present in the macular region of each fundus. The knee-jerks and the superficial reflexes are present, but the plantar reflex is of the extensor type. No personal dystrophic stigmata of

syphilis. *Treatment and progress:* The patient was placed upon potassium iodide, two grains three times a day. In August, 1904, some little improvement having taken place, vision was ascertained to be $\frac{1}{60}$ and No. 19 Jaeger. My colleague, Dr. James Taylor, who was good enough to examine the lad, reported that there was "no obvious sign of structural nervous disease." In October, 1904, a note was made to the effect that the pupils were equal and active, and that the child's general condition had improved. He could read No. 14 Jaeger with either eye, and recognise objects such as a penny, a box of matches, a brush, and so forth, at a distance of two feet. He always fixed to the right of an object held before him. The downward movements of his eyes are good, but all the other movements are defective. Hippus. The discs, especially as regards the outer half, a little pallid. Other fundus changes as noted. In April, 1905, the lad was thought to be getting brighter. He then read No. 20 Jaeger. Upward movement of the eyes was absent. I saw Albert B— the other day (July the 6th, 1905) and made the following note: "The optic discs, especially the left one, pallid. The fine pigmentary changes are not now limited to the macular region, but are also present in the circumpapillary region of the fundus, but not in the periphery. Upward movement of the eyeballs can scarcely be said to exist. General condition better."

FIG. 7.



My excuse for having dwelt at some length upon this form of mental and ocular degeneration is because the type has hardly yet been crystallised into concrete and tangible form, although individual cases must be familiar to every ophthalmologist and to most physicians.

References.

1. Batten, Rayner D.—'Ophthal. Soc. Trans.,' vol. xvii, p. 48.
2. Still and Gunn.—'Ophthal. Soc Trans.,' vol. xx, p. 108.
3. Batten, F. E.—'Ophthal. Soc. Trans.,' vol. xxiii, 1903.
4. Hirschberg.—'Centralbl. f. prak. Augen.,' January, 1904.
5. Mayou, S.—'Ophthal. Soc. Trans.,' vol. xxiv, p. 142.
6. Hutchison.—'Reports of the Society for the Study of Disease in Children,' vol. iv (1904), pp. 111 and 112.
7. Stephenson, S.—*Ibid.*, vol. v (1905).

(3) *Degeneration of the cornea.*—It has been known for some little time that, in rare instances, a peculiar degenerative affection of the cornea may be transmitted in families. This condition may be fairly included under what Sir William Gowers has recently termed "abiotrophy"—that is to say, a peculiar tendency in certain structures, particularly in those of the nervous system, to premature decay and to early death.

Fig. 8.

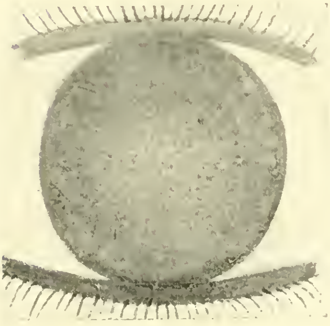
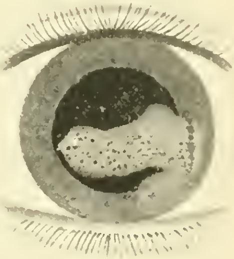


Fig. 9.



Under the name "lattice-like" keratitis, Professor Haab (1) described, in 1899, this curious condition in a boy, aged 16 years, whose maternal uncle and aunt were also affected. The corneal opacities looked at first glance as if they were the residue of an interstitial inflammation, but closer examination resolved them into a lattice-like system of lines intermingled with fine rounded dots. Symptoms of inflammation were conspicuous by their absence. Similar cases have been published, among others, by Dimmer (2), Hauenschild (3), and Freund (4). The last-named surgeon was able to refer to fifteen cases belonging to two families, of which one furnished seven and the other eight patients. In England this form of disease has been reported by R. Marcus Gunn (5) and W. T. Holmes Spicer (6).

Under the name of "nodular" opacities of the cornea another form of disease, which occurs under conditions similar to that just described, has been mentioned by several writers, as Groenouw (7), Manz (8), Eversbuch (9), Neznamow (10), Fuchs (11), R. W. Payne (12), Oscar Dodd (13), E. T. Collins (14), Koerber (15), and Dentschmann (16). The condition, which is associated with no signs of inflammation, takes the form of discrete grey dots, occupying at first almost exclusively the central region of the cornea.

FIG. 10.

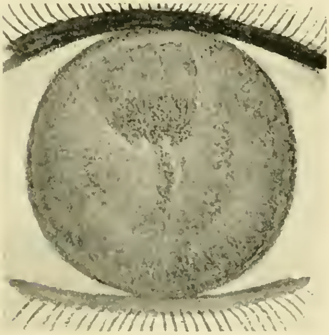


FIG. 11.

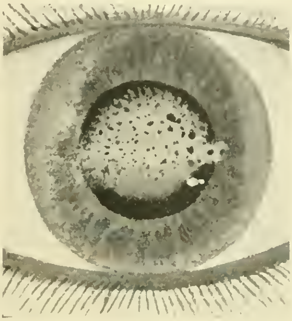
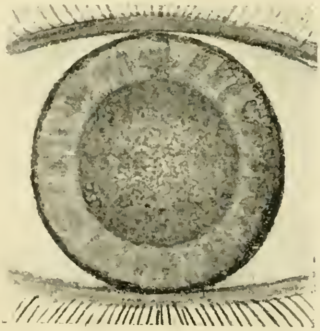


FIG 12.



These two corneal degenerations, "lattice-like" and "nodular," therefore agree in several particulars. For example, they generally begin at about the age of puberty, they are slowly progressive, they attack at first the central parts of the cornea, and, lastly, they show a marked tendency to run in families. The conclusion is that, at root, they are merely varieties of one and the same process of abiotrophy. This view is strengthened by a series of cases published recently by Mr. R. W. Doyne and myself (17), in which three generations of a particular family manifested seven instances of a slowly progressive and bilateral degeneration of the cornea, leading to serious impairment of sight after lasting for several years. Neither syphilis nor consanguinity existed. The thyroid gland showed no changes. Some of the patients presented the so-called "nodular" and others the "lattice-like" opacities, while in still a third group the corneal changes did not resemble either of the two conditions named (see figures). At the same time, it would be opposed to sound reason to suppose that the malady in its essential features differed in the various members of the family described by Mr. Doyne and myself.

We may reasonably conclude that there exists a "family degeneration of the cornea" of a special kind that may assume clinically either the "nodular" or the "lattice-like," or some intermediate and indeterminate type.

References.

1. Haab.—'Zeitschrift f. Augenheilkunde,' 1899, p. 235.
2. Dimmer.—*Ibid.*, p. 354.
3. Hauenschild.—*Ibid.*, 1901, p. 139.
4. Freund.—v. Graefe's 'Archiv f. Ophthal.,' 1903, p. 377.
5. Gunn, R. M.—'Ophthal. Soc. Trans.,' vol. xxii (1902), p. 97.
6. Spicer.—*Ibid.*, vol. xxiv (1904), p. 42.
7. Groenouw.—v. Graefe's 'Archiv f. Ophthal.,' 1898, i, p. 85.
8. Manz.—'Wien. Med. Woch.,' 1891, Nos. 3 and 4.
9. Eversbuch.—'Deutsche med. Woch.,' 1893, No. 41.
10. Neznamow.—'Westnik Ophthal.,' 1900, Nos. 4 and 5.
11. Fuchs.—v. Graefe's 'Archiv f. Ophthal.,' 1902, p. 423.
12. Payne.—'Amer. Journ. of Ophthalmology,' 1901, p. 611.
13. Dodd, Oscar.—*Ibid.*, 1901, p. 300.
14. Collins, E. T.—'Ophthal. Soc. Trans.,' vol. xxii (1902), p. 148.
15. Koeber.—'Zeitschrift. f. Augen.,' 1902, p. 340.
16. Deutschmann.—'Beiträge z. Augen.,' November, 1904.
17. Doyne and Stephenson.—'Ophthalmoscope,' May, 1905.

Congenital Word Blindness.

Thanks to the labours of James Kerr, W. Pringle Morgan, Bastian, Hinshelwood, Nettleship, Lechner, Wernicke, and Bruner, surgeons have during recent years become familiarised with a singular congenital defect in which otherwise intelligent children experience more or less difficulty in learning to read. The number of reported cases is as yet small, but there are now substantial reasons for believing that congenital word blindness is far from uncommon, especially among the children of the lower classes.* Eighty-five per cent. of the cases have been reported by ophthalmic surgeons, a fact that goes to show that among the better classes such patients, at all events in the first instance, seek special rather than general medical advice. The disability differs in intensity, and ranges from a mere difficulty in learning how to read to an almost complete inability to do so. On the other hand, arithmetical numerals seldom offer any difficulty. A majority of the published cases have been in males, a point in which word blindness reminds one of colour blindness. Some of the sufferers have been of a markedly neurotic temperament, as in cases published by myself. I have recently met with two cases (still unpublished) in which a similar defect had existed in the mother or in other members of the family.

The condition is probably due to a congenital defect in the visual memory centre for words and letters, and it will be a matter of great interest to inquire into its relationship with allied states, such as congenital word deafness, amusia, ecolalia, "word cropping," and idioglossia. The auditory memory has been highly developed in most of the patients. One of Wernicke's patients could speak two languages correctly; a patient of Hinshelwood's concealed his difficulty in reading for a time by learning the contents of his primer off by heart; Lechner's patient is stated to have known the contents of his school books by rote; and one of my own patients could memorise well and quickly anything told or read to him. Indeed, not the least interesting point about the condition is the way in which children compensate for and often manage to conceal their defect. They get help from the auditory route and especially from the so-called kinæsthetic memory—*i. e.* the repeating of a sentence with the lips.

The improvement to be obtained in these children depends obviously upon the original severity of the case and the educational means adopted. With individual tuition even severe instances of alexia are capable of considerable improvement. It is clear that the sooner the defect is recognised the earlier can such training be commenced. Education in these children should be individual and largely verbal.

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* Dr. C. J. Thomas ('Ophthalmoscope,' August, 1905) calculates that 1 in 2,000 of all London Elementary School children are congenitally word blind, and he states that there are now nearly one hundred instances of the condition noted in the case-books at the special schools for the mentally defective. His original communication should be read by all interested in the subject.

Diagnosis offers few difficulties if once the fact be grasped that there is such a thing as a congenital inability to read. Confusion, however, might arise when word blindness co-existed with a considerable error in refraction. Even then the history should safeguard us against error, while the fact that the child experienced exactly the same difficulty in reading large as he did small type would be strongly suggestive of the existence of this curious and interesting congenital defect. It may be added that more than one of the case histories comment upon the fact that the patient never read for pleasure.

References.

1. Kerr, James.—'Howard Essay,' 1895, and 'Lancet,' May the 19th, 1900, p. 1446.
2. Morgan, W. Pringle.—'British Medical Journal,' November the 7th, 1896.
3. Bastian.—'Aphasia and other Speech Defects.' London, 1898.
4. Hinshelwood.—'Lancet,' May the 26th, 1900, and 'Ophthalmic Review,' 1901, p. 91, and 'Ophthalmoscope,' October, 1904.
5. Nettleship.—'Ophthalmic Review,' 1901, p. 61.
6. Lechner.—'Ned. Tijdschr. v. Geneeskunde,' 1903, No. 5.
7. Wernicke.—'Centralbl. f. prak. Augen.,' September, 1903.
8. Stephenson.—'Lancet,' September the 17th, 1904, and 'Reports of the Society for the Study of Disease in Children,' vol. iv, 1904, p. 165.
9. Bruner, W. E.—'Ophthalmology,' January, 1905.

Injuries to the Eye During Labour.

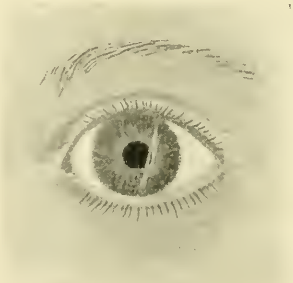
It is a matter of familiar knowledge that during the progress of labour, natural or instrumental, the eyes of the child are liable to be injured. Such injuries, in addition to being of the most varied kinds, may be brought about in several different ways, of which the most important are the application of forceps, clumsy digital examinations, and prolonged labour in women with deformed or unusually narrow pelves. Some of the injuries are of little practical importance, as the common and harmless effusion of blood beneath the conjunctiva; whereas others, as dislocation of the eyeball, are of the most serious description. Leaving on one side such injuries as ecchymosis or wounds of the eyelids and fractures of the orbit, we have to consider four particular injuries, viz—(1) corneal lesions; (2) retinal hæmorrhages; (3) dislocation of the eyeball; and (4) obstetrical paralysis.

(1) *Corneal lesions.*—A valuable article by Drs. Thomson and Buchanan (1) upon certain injuries to the cornea now and then sustained by the infant during birth has focussed the attention both of ophthalmic surgeons and of obstetricians upon these lesions. Cases of the kind have been reported by Noyes (2), Dujardin (3),

de Wecker (4), True (5), Sidler-Huguenin (6), Cargill (7), Fejer (8), Wolff (14), and myself (9). Drs. Thomson and Buchanan, however, have seen a considerable number of these cases in Glasgow, where rickets and consequently deformed pelves appear to be singularly common. How rare the condition is in some other places is shown by our experience at Queen Charlotte's Hospital, London, where on the average 1200 births take place annually, and forceps are applied in fully 10 per cent. of the births. At that hospital one case of injury to the cornea only has been recognised.

According to Thomson and Buchanan, there are two forms of corneal opacity—(1) a diffuse temporary opacity, and (2) a permanent linear opacity, more often multiple than single. The first form (much the commoner) is due to œdema. The second form is the outcome of rupture of the posterior elastic lamina of the cornea and the subsequent formation of fibrous tissue. The common appearance will be seen from the figure, sketched from a case under my care

Fig. 13.



Now, a majority of these injuries have followed instrumental labour, and are presumably due to direct injury by the forceps. This explanation (which has, at least, the merit of simplicity) does not account for every case, since Sidler-Huguenin and Thomson and Buchanan have published instances where it was evident that no such injury was likely to have taken place. For example, bilateral œdema of the cornea was produced in one baby (stillborn) by blocking of a normal pelvis by the simultaneous presentation of the face, arm, and cord, and in this case instruments were not employed. Besides, it must be remembered that forceps are applied only in difficult cases, and that the injury may be due, not to the instrument at all, but to the cause or the causes of the difficult labour. From a medico-legal standpoint it is clear that the possibility of non-instrumental injury is important.

As regards the permanent results of these injuries there can be no doubt, as in a case of my own, that the scar-tissue produces considerable irregular astigmatism and consequent interference with sight. Another point is that confusion may arise between these injuries, on the one hand, and so-called "congenital opacity" of the cornea, on the other.

(2) *Retinal hæmorrhages.*—The frequency of retinal hæmorrhages after normal labour has been established at from 10 per cent. to 32 per cent. (Schleich). Coburn (10) examined the eyes of thirty-seven infants, either stillborn or who had survived not longer than 22 days. Hæmorrhages were found in seventeen instances—that is, in 45 per cent. Most of the ecchymoses lay in the equatorial part of the eye, while the macular region presented few such changes. In other words, Coburn's histological investigations go to show that hæmorrhage may often be present, even although to ophthalmoscopic examination the fundus looks healthy. It is suggested that the extravasations result from disturbance of the retinal circulation, due to compression of the central blood-vessels of the optic nerve by cerebro-spinal fluid under high pressure. They are therefore to be regarded as an evidence of intra-cranial pressure leading to blood stasis. Wehrli (13) has recently suggested that in a majority of cases the exciting cause of glioma of the retina is be found in retinal hæmorrhage sustained at birth.

(3) *Dislocation of the eyeball.*—Cases of dislocation of the eyeball, partial or complete, have been reported in this country by Beaumont, Snell, and by Thomson and Buchanan. In most of the cases there has co-existed a depression of the cranial bones above the orbit on the affected side, so that Thomson and Buchanan are undoubtedly correct in designating the injury as "extrusion" of the eyeball rather than "dislocation." There is another possible explanation, as in a celebrated case quoted by de Wecker (4), where an accoucheur, mistaking a face for a buttock presentation, managed to gouge out the baby's eye with his finger. Short of actual extrusion of the eyeball, cases are known in which there has been proptosis, or in which the optic nerve has been torn through.

(4) *Obstetrical paralysis.*—The form of obstetrical paralysis most familiar to practitioners is perhaps that of the facial nerve, due to compression or bruising by the forceps or by the pelvis of the nervous trunk where it emerges from the stylo-mastoid foramen of the temporal bone. It does not appear to be so generally known,

however, that several other cranial nerves may suffer, individually or collectively, as, for example, the third, fourth, and sixth. Even the superior cervical ganglion of the sympathetic may be involved, to judge from a case reported by Reese, who observed in a baby delivered by forceps cranial deformity, narrowing of the palpebral fissure, contraction of the pupil, and enophthalmos.

The exact mechanism whereby these various paralyses are produced is not always very evident, although it is tolerably clear, as hinted, in the case of facial paralysis. As regards the third, fourth, and sixth nerves, it may be due either to fracture of the bones of the orbit or to intra-cranial or intra-orbital extravasation of blood. The fact that the paralysis not infrequently is of a more or less transient character favours the last-named view. In a case described by Küstner, where the third, fourth, sixth, and seventh pairs were affected, the paralysis was found after death to be due to hæmorrhages at the base of the brain, as well as to lesions of the orbital walls.

The subject of obstetrical paralysis gains added importance from the fact that such injuries may be confused with so-called "congenital paralysis" of the ocular muscles, due either to the maldevelopment of centres or of muscles, or more probably, as I now think, to intra-uterine polio-encephalitis.

REFERENCES.

1. THOMSON AND BUCHANAN.—'Ophthalmoscope.' June, 1905.
2. NOYES.—'Trans. Amer. Ophthal. Soc.,' 1896, p. 454.
3. DUJARDIN.—'Journ. des Sciences méd. de Lille,' 1896.
4. DE WECKER.—'Annales d'oculistique,' 1896, p. 40.
5. TRUC.—*Ibid.*, 1898, p. 161.
6. SIDLER-HUGUENIN.—'Correspondenz-Blatt f. Schw. Aerzte,' November the 6th, 1903.
7. CARGILL.—'Ophthal. Soc. Trans.,' vol. xxii (1902), p. 245.
8. FEJER.—'Centralbl. f. prak. Augen.,' August, 1904.
9. STEPHENSON, S.—'Ophthalmoscope,' January, 1905.
10. COBURN.—'Archives of Ophthalmology,' May, 1904.
11. BEAUMONT.—'Provincial Medical Journal,' 1892.
12. SNELL.—'Ophthal. Soc. Trans.,' vol. xxiii (1903), p. 294.
13. WEHRLI.—'Correspondenz-Blatt. f. Schweizer Aerzte,' January the 15th, 1905.
14. WOLFF, H.—'Beit. z. Augen.,' 1905.

A CASE OF TUBERCULOSIS OF A DIVERTICULUM OF THE BLADDER FOUND IN AN INGUINAL HERNIA.

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Late House Surgeon to the Hospital for Sick Children, Great Ormond Street, and the Middlesex Hospital, etc.

We have brought this case to the notice of the Society* on account of the rarity of the conditions it presented.

A boy, aged 18 months, was admitted into the Hospital for Sick Children, Great Ormond Street, in July, 1904. According to the mother's account, a swelling had been present in the right side of the scrotum since birth. It varied in size from time to time, and when the child was in bed often almost entirely disappeared. On the whole there had been a decided increase in the size of the swelling. There was no history of any pain, tenderness, or urinary symptoms.

On admission, the child presented a moderate-sized swelling on the right side of the scrotum, extending from the external abdominal ring to a point just above the testicle. The examination provoked neither pain nor the desire for micturition. The condition was regarded as an ordinary irreducible hernia in a sac, which was distinct from the tunica vaginalis of the testis.

In the short time during which the patient was under observation previous to the operation no noteworthy change occurred in the condition. At the operation the inguinal canal was opened throughout its length, when it was apparent that the state of affairs was unusual. No peritoneal sac was obvious, and there appeared to be an unusual amount of rather dense fibro-fatty tissue present. Further dissection revealed a layer of muscle, which on incision was found to enclose a thin-walled sac, from which there immediately flowed several drachms of pale, clear urine. This was under no pressure, but flowed out in a gentle stream, amplified with each inspiration. Examination with the finger and sound showed indubitably that it was a process of the bladder which had been opened: the opposite inguinal region was examined by means of a finger in the bladder, but with a negative result.

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* Clinical Society, London, October the 13th, 1905.

An attempt was now made to separate the process from the structures of the cord, which was found to be spread over its outer and anterior surfaces. This was quite easy above, but at the lower end it was found to be somewhat firmly adherent, more particularly to the upper end of the tunica vaginalis testis; and at this part the process, which for the greater part of its extent was of uniform character, showed quite a remarkable bulky enlargement, due to considerable thickening of its wall and, owing to the presence of a dimple, the most remarkable resemblance, both to sight and touch, to the os uteri.

The process, which when isolated was found to be about two inches long, was excised at the level of the internal abdominal ring, the bladder being sewn up with two layers of continuous sutures. The operation was then completed on the lines of Bassini's method, and the wound closed without drainage.

The part removed showed a mucous lining which was like the bladder mucous membrane, except that it was smoother. At the part covering the thickened lower end of the sac there was some superficial ulceration. The whole mass was put into hardening solution, and kept for further examination.

During the course of the operation a most careful search failed to find any trace of a co-existing peritoneal hernia sac, and we must, therefore, regard this case as one of hernia of the bladder of the purely extra-peritoneal type.

Hernia of the bladder of all types is a rare occurrence in children. Gibson,[*] of New York, in 1897, when analysing 103 cases of hernia of the bladder of all varieties, found only three in children; while. Moynihan,[†] lecturing in 1900, was only able to add one more case. Since that date two cases have been published, one by Mr. Curtis [‡] and one by Dr. Taylor.[§]

Mr. Curtis refers to other unpublished cases, all of which died of septic peritonitis, a calamity which no doubt accounts for the small number of published cases.

Where it has been possible to refer to the original papers, in most of the instances the hernia was upon the right side, which was the case in our patient. The ages of the reported cases vary between two and thirteen; our case is, therefore, the youngest so far recorded. None of them were diagnosed correctly before operation, and there appears to have been a complete absence of all classical symptoms, such as the *micture à deux temps*, which are probably only found in adults, with large direct herniæ containing a large proportion of the bladder.

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[*] Gibson. 'Med. Soc. Trans.,' New York, 1897.

[†] Moynihan. 'Brit. Med. Journ.,' 1900.

[‡] Curtis. 'Brit. Med. Journ.,' 1903, vol. ii.

[§] Taylor. 'Lancet,' 1903, vol. i.

The treatment obviously depends upon the stage at which the condition is disclosed; if the bladder is cut into, then the incision must be carefully sutured after excising the diverticulum, and the organ returned to the abdomen, any associated peritoneal protrusion being dealt with *secundum artem*. If recognised earlier, the peritoneum can be gently separated, and the bladder pushed back out of the way. In our own case the line of treatment was justified by the length and shape of the protrusion, and by the fact that it had already been incised. In children the question of drainage need hardly detain us, as the urine is perfectly sterile, and one can now rely upon a water-tight suturing.

The catheter *à demain* is universally condemned as unnecessary and harmful, while periodic catheterisation is not usually indicated.

As to the causes of hernia of the bladder we have no certain knowledge; it is certainly very easy in the course of any ordinary radical cure of hernia, by excessive traction upon the peritoneum, to pull out a portion of the bladder, which may be recognised at the inner pillar of the ring by the reddish-brown colour of its muscle, often concealed, however, by a layer of extra-peritoneal fat. And again, the presence of bladder in recurrent hernia is not uncommon. This renders it probable that the descent of the bladder is secondary to the descent of the peritoneum, which perhaps in these cases has a more intimate connection with the bladder than is usual.

This may account for many of the cases, but how are we to account for the condition of affairs in our case? Here there was no peritoneum to lead the way. As a possible explanation one thinks of the vagaries of the mysterious gubernaculum testis; it is possible that an abnormal attachment to the bladder may have led to the condition.

Any classification of these cases, in our present state of knowledge, is purely arbitrary, and is only possible on an anatomical basis, depending upon the presence or absence of peritoneum. We may, therefore, describe a purely extra-peritoneal type when there is a diverticulum of the bladder lying in the inguinal canal unassociated with peritoneum. Of this class our case is the sole representative.

The other class must include all cases of oblique inguinal hernia in which the protrusion of a peritoneal hernial pouch is associated with the descent of part of the bladder. The cases in the group will vary in degree : in some the bladder element will be very small, being represented by a slight bulging at the inner pillar of ring ; in the other the bladder will predominate, the peritoneum being present as an insignificant pouch, which, as has been strongly urged by Moynihan,* is very likely to be overlooked.

Direct herniæ are, of course, unknown in children, and we have failed to find any record of the presence of the bladder in a femoral hernia in a child, although not unknown, of course, in adults. The infrequency of hernia of the bladder in childhood is a matter for some surprise when one remembers the relatively high position in the abdomen occupied by the viscus. But, on the other hand, the majority of cases of hernia of the bladder in adults are of the direct variety, and therefore arise from a point much nearer the middle line than in the oblique variety. And again, many of the cases are recurrent after "radical cures" in which the bladder has probably been already pulled into dangerous proximity to the interior abdominal ring.

The further history of our case is of great interest. The part removed at the operation was sent to the pathologist, who reported that the area of ulceration and thickening at the lower end of the sac showed a typical round-cell infiltration with giant-cell formation, indicative of the presence of tuberculosis.

This came as a great surprise, in view of the absence of symptoms and the healthy appearance of the child, and careful examination failing to show any further signs of tuberculous mischief, he was discharged in about a fortnight with the wound soundly healed.

About two months after the operation, however, he was brought back to the hospital with the history that his abdomen had been getting larger during the last few weeks. Examination revealed a large amount of free fluid in the belly, but no tumour and no enlargement of the glands. Laparotomy was performed a few days afterwards, and after the evacuation of a large quantity of almost clear yellowish fluid, it was found that the peritoneum, parietal and visceral, was red, injected, and covered with miliary tubercles. The site of the former operation was examined, and it was found that the peritoneum over the internal abdominal ring was quite smooth. The peritoneum was sponged dry, and the wound closed completely. The boy made an excellent recovery. There was no reaccumulation of fluid, and he left the hospital convalescent. He was seen by one of us a few weeks ago, and is now, fourteen months after the second operation, in good health, without any sign of recurrence of either his hernia or his tuberculous peritonitis.

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* *Loc. cit.*

This case is interesting, therefore, not only on account of the coincidence of the presence of tuberculosis in a unique example of hernia of the bladder, but because of the remarkable way in which the boy was cured of what was regarded as rapid tuberculous peritonitis by the simple procedure of laparotomy with evacuation of the fluid.

The Society for the Study of Disease in Children.

A meeting of this Society was held on Friday, November 18th, Mr. R. Clement Lucas in the Chair.

A Case of Spina Bifida in a girl aged 1 year and 7 months, having also well-marked post-anal dimples, was shown by Mr. Francis Jaffrey. It was situated in the lumbo-sacral region. With the exception of some weakness of the legs there was no definite paralysis.

A Case of Complete Hare-Lip and Cleft Palate on the Left Side and Partial Hare-Lip on the Right was shown by Mr. G. R. Wilson.

A Case of Volkmann's Contracture in a boy aged 12 years was shown by Mr. P. Lockhart Mummery. Three years ago he injured his wrist and was treated by the application of splints; this was followed by ulceration of the forearm on the anterior and posterior aspects of the limb and flexion of the fingers and wrist, with wasting of the muscles. Mr. Mummery was of opinion that the best treatment for severe cases is resection of portions of the radius and ulna.

Two Cases of Tinea Tonsurans, one in a girl aged 9 years and the other in a boy aged 11 years, who had been treated by one application of X rays for twenty minutes, was shown by Mr. George Pernet. In the case of the girl she was quite cured and the hair was growing again, and in the boy, though the disease was cured, the hair had not yet grown. Mr. Pernet pointed out the great amount of time that was saved by this treatment.

A Case of Obstruction of the Central Artery of the Retina in a girl, aged 15 years, was shown by Mr. Sydney Stephenson. On October the 26th the patient noticed what she described as a "dazzling" in her left eye, and found that she could see parts of objects only. Ophthalmoscopic examination showed that the optic disc was indistinct, and the central part of the retina very pale, except as regards a small area contiguous to the lower outer side of the disc. The sight of the eye was reduced to the appreciation of shadows only. He thought the obstruction to be almost certainly due etither o embolism or to thrombosis of the central artery.

A Case of Atrophic Paralysis of the Right Arm, probably due to anterior poliomyelitis, in a girl aged 10 years, was shown by Dr. Farquhar

BUZZARD. There was paralysis of the muscles supplied by the seventh and eighth cervical and first dorsal segments.

A Case of Anterior Poliomyelitis in a boy aged 5 years was shown by Dr. F. J. POYNTON. There was widely distributed loss of power, affecting the arm and trunk muscles. There was no loss of sensation, and reflexes were everywhere obtained.

A Case of Infantile Paralysis affecting the Abdomen, both Legs, and the Left Arm was shown by Dr. GEORGE CARPENTER. The boy, aged 4 months, had been under the care of Dr. Cardy Bluck, of Southend-on-Sea. When 2½ months old he was attacked by fever, anorexia, and paralysis. No reaction of degeneration was obtained in the arms. In the left leg reaction of degeneration was present, and in the right leg loss of reaction to Faradism, but no polar change. The abdominal muscles were powerless and did not react to Faradism. Since he had been in hospital he had regained some use of the right arm and shoulder and abdomen. The latter now acted to Faradism below the level of the umbilicus, but above it was immobile to either current. The recti did not react.

A Case of Peculiar Pigmentation of the Skin in a girl aged 15 years, probably an incomplete form of Recklinghausen's disease, was shown by Dr. F. PARKES WEBER. The earliest pigmentation was noticed at the back of the neck when the child was about 18 months old. There were now three kinds of pigmentation to be distinguished on the body, viz.: (1) large, ill-defined, brownish patches; (2) sharply-defined brown spots; (3) a group of very dark, almost black, spots. The patient presented only one small flaccid molluscus tumour.

A Paper on Some Points in the Diet of Children during the Second Year was read by Mr. J. C. MACKINTOSH (Hampstead). He pointed out that, though the practitioner has steered the child to apparent robust health at the end of the twelve months, yet during the next few months, in spite of the most careful directions, it often fails to thrive and refuses to take an adequate quantity of milk. The explanation is to be found in faulty dieting, the causes being the administration of solutions of meat extractives and an undue preponderance of starchy food, which make the child disdain the bland taste of milk and induce craving comparable to that of alcohol.

A Case of Multiple Renal Calculi in a girl aged 9 years was the subject of a short paper Mr. FRANCIS JAFFREY. The child had suffered for two years from frequent attacks of pain in the left lumbar region. At the operation Mr. Jaffrey removed eleven calculi about the size of a pea. Recovery was uneventful. The composition of the calculi was calcium oxalate, with a small quantity of calcium phosphate.

A Case of Removal of a Calculus Impacted in the Ureter causing Hydronephrosis was related by Mr. R. CLEMENT LUCAS. The case occurred in a boy aged 11 years, who had had loin pain and attacks of colic for eight years—that is, since he was three years of age. Mr. Lucas opened the hydronephrosis at the pelvis of the kidney and failed to find a stone, but, finding the orifice of the ureter dilated, extended his incision downwards and forward to Poupart's ligament, and displacing the contents of the iliac fossa forwards, found an elliptical stone impacted in the ureter about two inches below the kidney. The stone was removed through a longitudinal incision, which was closed with fine silk. The pelvis of the kidney was closed with chromic gut. No leakage followed, and the boy left the hospital healed and well on the sixteenth day after the operation.

A Specimen of Saccular Dilatation of the Small Intestine removed from a child aged 5 weeks was shown by Dr. Edmund Cautley. A saccular dilatation of the upper part of the ileum, the size of a hen's egg, opened into the ileum by a small orifice. During life it was at times filled with intestinal contents or gas, and varied in size, mobility, and resonance. The wall was composed of normal gut. It gave rise to symptoms of intestinal obstruction.

A Specimen of Diaphragmatic Hernia in a female aged 4 months was shown by Dr. Edmund Cautley. The large intestine, a large portion of the small intestine, and part of the liver had passed through an opening in the right half of the diaphragm into the pleural cavity and were covered by pleura. The compressed right lung was also shown. No intestinal obstruction occurred in life.

A Case of Hydrocephalus in a boy aged 8 years who had been under the care of Dr. Cardy Bluck of Southend-on-Sea, was shown by Dr. George Carpenter. The head, which was wedge-shaped and pointed in front, measured 25½ inches in circumference; it began to enlarge when three years old and was said to have enlarged 1 inch during the last three weeks. Commencing post papillitic optic atrophy. Talipes equino-varus, extensor plantar reflexes, and exaggerated knee-jerks were prominent features. Often wet and dirty. Tâche cérébrale well marked. Speech slow and scanning.

A Case of Cirrhosis of the Lung and Bronchiectasis in a boy aged 3 years and 9 months was shown by Dr. George Carpenter. The affection dated from measles when three months old. Clubbing of the fingers and toes also appeared at that time. The left lung was solid and the liver and spleen enlarged. Since he had been in hospital he had expectorated from one to six ounces of muco-pus—usually two to four ounces. Neither tubercle bacilli nor encapsuled diplococci were found. Evening rises of temperature occurred. Red corpuscles 8,270,000 per cmm; white corpuscles 11,250 per cmm.

Two Cases of Pseudo-Hypertrophic Paralysis were shown by Dr. George Carpenter. The first, a boy aged 11 years, had been under the care of Dr. Harrison Davison of Odiham, Hants. The child had been weak since birth and had never walked. At two and a half years attacks of stiffening of the limbs commenced. No family history of the complaint. Walked with assistance and with the legs wide apart, but was too weak to completely get up from the floor. Deltoids enlarged and weak, and triceps muscles slightly enlarged. Supra- and infra-spinati wasted; the latissimus dorsi could not be felt. The trapezius, pectoral, biceps, and cora co-brachialis muscles were wasted. Calf muscles enlarged, and the muscles of fronts of legs rather prominent. No knee-jerks. Some loss to Faradism, but otherwise electrical reactions normal. He looked fatuous and was shy, but knew objects in picture-books. Incontinence of urine and fæces, but asked occasionally. The second case was a boy aged 6 years. No family history of the affection. Weakness had been noticed for one year only. The calf muscles were decidedly enlarged, the extensor muscles of the thigh somewhat prominent. The triceps and infra-spinati muscles were enlarged. The pectoral muscles were thin. No fibrillary contractions. Knee-jerks present. Got up from the floor in a typical way by "climbing up himself." Bright and intelligent. Always incontinence of urine and fæces.

The following members took part in the discussion: Mr. Clement Lucas, Mr. Francis Jaffrey, Dr. Edmund Cautley, Mr. Thompson Walker, Mr. Clogg, Mr. Milner Burgess (Harlesden), Dr. Cardy Bluck (Southend-on-Sea), and Dr. F. J. Poynton.

Editorial.

THE OPERATIVE TREATMENT OF INTRA-CRANIAL HÆMORRHAGES OF THE NEW-BORN.

We propose this month to anticipate a topic which in the future will possibly bulk largely in relation to the prevention of a condition that hitherto has been in no wise amenable to treatment. We refer to certain varieties of Little's disease, or spastic diplegia.

An important cause of this affection is meningeal hæmorrhage occurring at, or soon after, birth. The pathogeny of this hæmorrhage is by no means fully understood as yet, though distinct advances in our knowledge have been made of late in this country, especially by Howell Evans. It seems certain that the accident may take place in cases giving no history of unusually dystocic labours or of difficulty in the induction of natural respiration in the infant. It is none the less certain that once the accident has taken place the only chance of preventing either death or permanent after-effects lies in early diagnosis and immediate treatment of the hæmorrhage on established surgical principles. Up to the present it is surprising how rarely this obvious procedure has been resorted to.

Harvey Cushing * has recently reported four cases of intra-cranial hæmorrhage in the new-born in which he has resorted to operation for the cure of the condition, two of these being successful.

The first successful case was that of a child eight days old with unilateral hæmorrhage, and the second was that of a child of nine days with bilateral hæmorrhage.

When operating, Cushing turns down one or both parietal bones, opens the dura mater, removes the blood and blood-clot, and irrigates the surface of the brain with warm salt-water.

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* 'Amer. Journ. Med. Sci.,' October, 1904, abstracted in this number's British Journal of Children's Diseases.

He recommends operation as soon as the diagnosis can be made, and when operating to avoid exposure and loss of blood.

In Cushing's opinion the diagnosis of the condition is not difficult. He relies upon the following points: (1) Asphyxia at the labour; (2) a tense and probably non-pulsatile fontanelle; (3) the onset of convulsions a few days after birth; (4) undue reflex excitability; and (5) ocular palsies and unequal pupils.

When these signs are equivocal or absent, he maintains that the diagnosis can be settled by lumbar puncture, which, as in the adult, always reveals blood-containing fluid in cases of meningeal hæmorrhage.

Cushing further regards intra-cranial hæmorrhage as due to strain on the cortical veins from over-riding of the parietal bones during the birth.

But there is another explanation. Howell Evans,* in a communication to the Society for the Study of Disease in Children, in January, 1904, pointed out that these hæmorrhages are due to rupture of the blood-vessels passing through the parietal bones from the scalp to the interior of the skull, *viâ* the sagittal fontanelle, the intra-parietal suture, or the parietal foramina, as the case may be, laceration being due to the over-riding during labour of those portions of the parietal bones in relation to these structures. He also affirmed that the condition is more liable to be found in connection with that parietal bone which lies outermost.

Rupture of these vessels produces either a cephalhæmatoma externa or interna, or intra-cranial hæmorrhage, or a combination of these conditions. Hæmorrhage, according to Evans, takes place during the reactionary period after birth; subsequent to birth alteration in the blood-pressure comes on gradually, and about the third day the tension is markedly increased, and it is at this period that cephalhæmatomata are most prominent. Infantile blood is very deficient in clotting power, as Scherenzies was the first to show, and with the rise of blood-pressure a weak clot is apt to be displaced.

Cushing has proved that cases of intra-cranial hæmorrhage are amenable to surgical treatment, but the signs on which he relies for its early diagnosis are open to the criticism that they are often not present.

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* 'Reports of the Society for the Study of Disease in Children,' vol. iv, pp. 100–106. See also BRITISH JOURNAL OF CHILDREN'S DISEASES, May, 1904.

Asphyxia at the birth is frequently absent; in many cases of spastic paralyses which were presumably caused by neonatal hæmorrhage labour has been natural. If the hæmorrhage is very extensive, or if it be at the base, the infant usually dies at once. Should it survive the accident it is dull or stuporose, with slow, irregular respirations and a slow, feeble pulse.

Convulsions are common four or five days after birth, with cortical hæmorrhages, but they are less frequently met with in extravasation of blood at the base, and they may not be present in any case. The majority of the fatal cases die within this period. Associated with convulsions may be opisthotonos and rigidity of the limbs, or muscular relaxation may be a feature, or there may be automatic movements. There is usually no obvious paralysis at first, perhaps not for some months.

But localised cortical hæmorrhage may cause corresponding paralysis—*e. g.* facial paralysis, hemiplegia, monoplegia, and diplegia. The mildest cases usually do not give rise to symptoms; on the other hand, a large hæmorrhage is often immediately fatal, though extensive cortical hæmorrhage may not kill the infant. Oscillation of the eyeballs and contraction of the pupils rather than dilatation are sometimes present, but they cannot be considered important signs. Bulging of the fontanelle only occurs with a large hæmorrhage.

Given, then, that the condition be recognised, Cushing has demonstrated that there is considerable hope that such cases in the future will be amenable to surgical relief, a marked advance on the present treatment of this hitherto hopeless condition.

One note of caution comes from Danielewsky. This worker, whose experiments have been confirmed by Jean Demoor, asserts that the trephining alone of young animals, apart even from opening of the meninges, leads to epilepsy in later life, notably at puberty. The factors concerned in this process and the exact conditions under which it arises are well worthy of further study. It is clear, however, that such remote possibilities, which have not been shown to be operative in the human, should in no way deter a surgeon from the application of his recognised principles in the treatment of such a grave condition as meningeal hæmorrhage.

Abstracts from Current Literature.

Medicine.

Family disseminate sclerosis. Contribution to the study of the pathogeny of the heredo-family spasmodic paraplegias (*'Riv. Crit. di Clin. Med.,'* 1904, *No.* 15; *'Arch. de Neurol.,' March,* 1905, *vol.* XIX, *p.* 240).—**Massalongo** records two cases of this affection in brothers, one aged 5 and the other 4 years. In one child it began at 2½ years, in the other at 1 year and 10 months. The features of the complaint are spasmodic paraplegia with increased reflexes and Babinski's sign, nystagmus, intention tremor, staccato high-pitched speech. The intellect remains normal. The two other children of the family were healthy but for exaggeration of the reflexes. A. Ernest Jones.

Disseminate sclerosis in a child, aged 5 years (*Société de Neurologie, February* 2, 1905; *'Arch. de Neurol.,' March,* 1905, *vol.* XIX, *p.* 249).—**Armand-Delille** showed a child affected with this disease. Intention tremor, spastic gait, exaggeration of the deep reflexes, and nystagmus were the evidences present. A. Ernest Jones.

Contribution to the study of the relation of general paralysis and Tabes dorsalis (*'American Journal of Insanity,' April,* 1905, *vol.* LXI, *p.* 581).—**Henry A. Cotton** has an article of some sixty pages concerned with this subject. , He only touches on the etiological and evolutionary relationships, and deals mainly with the clinical and anatomico-pathological resemblances. The cases occurring in children with hereditary syphilis are briefly referred to. Twelve adult cases of combined tabo-paralysis were studied clinically and pathologically in great detail. The conclusions are as follows: Nageotte's statement that tabes complicates two thirds of the cases of general paralysis is supported both on clinical and pathological grounds. The sensory affections in tabo-paralysis are shown to be very variable both in site and character. The author supports Schaffer's view as to the elective affinity of the syphilitic virus, general paralysis being a system and not a diffuse degeneration. The cord changes found in general paralysis, save for being more extensive—involving, for instance, the pyramidal tracts—differ in no way from those found in tabes. Finally, it is extremely probable that both diseases are but slightly different manifestations of one cause. A. Ernest Jones.

Comparative measurements of the hard palate in normal and feeble-minded individuals. A preliminary Report (*'American Journal of Insanity,' April,* 1905, *vol.* LXI, *p.* 687).—**Walter Channing and Clark Wiegler** make a brief report upon the results of several years' work on this subject. The assumption that certain types of deformity are the correlates of feeble-mindedness is so generally current that it is made a principle of diagnosis, and it is with the idea of questioning this assumption and establishing it, if true, upon a scientific basis that the work has been undertaken. Casts were accurately made from the mouths of 1624 persons, mainly children; both healthy and feeble-minded types were examined. The measurements reported in the present paper are: (1) the minimum distance between the first molars; (2) the maximum height of the palate; (3) the distance from the line joining the two molars to the alveolar point;

(4) the distance between the canines. These are the four measurements best meeting the requirements of such an investigation, but many others have also been studied. The results are tabulated according to modern mathematical methods. The first measurement ceases to increase in normal children after the twelfth year. The fourth increases until this year also, but instead of then remaining stationary it diminishes slightly towards adult life. The second measurement—the height of the palate—was found to increase until adult life, there being no sexual differences observed. As regards the feeble-minded, it is conclusively shown that the various measurements are the same as in normal individuals. The only noteworthy point is that the former, especially males, show a slightly greater tendency to variability. A. ERNEST JONES.

Late rickets ('*Pediatrics*,' *vol.* XVII, 1905, *pp.* 359 *and* 411; and '*Winburg Med. Journ.*,' *April*, 1905).—**R. W. Marsden** reports a case in a girl, aged 18 years. She was small, sallow, intelligent, and her general development was that of a girl of ten or eleven years, except for well-developed mammæ. There was marked enlargement of the lower epiphyses, of ulna, radius, femur, tibia, and fibula on both sides, and the bones were shorter than normal. The costo-chondral joints were distinctly enlarged. The spine showed a kyphotic curve in the sitting posture. Other points noted were: marked muscular weakness; deficiency in red cells, leucocytes, and hæmoglobin; stunted growth and defective dentition. There was a clear history of absence of deformity until the advanced age of eighteen and a half years. Most cases suggest that there has been throughout life some interference with the normal growth of bone. There are three possible methods of origin: (1) in the healthy; (2) a relapse, the disease in early life never having completely subsided; (3) recurrence, the disease having occurred in infancy but having completely subsided. Marsden discusses various reported cases and enters fully into a consideration of the etiology and pathology of these curious cases. EDMUND CAUTLEY.

Acute gonococcic pelvic peritonitis in children ('*La Clin. Infant.*,' *May*, 1905).—**Mauclaire** relates a case in a girl aged 15 years, admitted with an acute vulvo-vaginitis, who was seized six days later with severe abdominal pain, constipation and vomiting, the temperature rising to 41·2° C., pulse 130. The day following, on the question of laparotomy arising, some improvement was noticed which continued, and recovery ensued three weeks later. The author considers it necessary to distinguish between *pelvi-peritonitis*, *sub-umbilical*, and *general* peritonitis. The pain being diffuse in this case proved that it was not one of simple salpingitis; the absence of umbilical and sub-umbilical pain showed that the infection and peritoneal reaction were limited to the pelvis. Treatment is an interesting point; many observers (Variot, Comby, Broca, etc.) are partisans of non-intervention surgically, since gonococcic peritonitis has an abrupt onset, grave general symptoms, but early, unexpected and definite amelioration. The treatment should thus be "exclusively medical." The author, however, thinks that this only applies to slight cases; where there exists alarming symptoms surgical treatment is indicated, for recorded cases show that the infection is not purely gonococcal, staphylococci and streptococci being also present, while a study of fatal cases leads him to the opinion that one should intervene if the situation is threatening and not wait until it is compromised; if laparotomy is followed by death it is because it was done too late. Of the seven cases operated on, five recovered; of the eight fatal cases, only two were operated on. The author thinks that these cases are often confused with appendical peritonitis and operated on as such. VINCENT DICKINSON.

Gonorrhœal proctitis as a complication of vulvo-vaginitis in children (*'Berl. klin. Woch., March* 20, 1905). **R. Flügel** in a paper on this subject reports fifty-six cases of gonorrhœa in infants, and of these the rectum was involved in 20 per cent. Treatment consisted chiefly of ichthyol suppositories, or in severe cases irrigation with nitrate of silver 1 in 3000. Most of the cases cleared up quickly under this treatment.

P. LOCKHART MUMMERY.

Tuberculosis of the skin after measles (*'La Clin. Infant,' June*, 1905, *p.* 375).—**Gaucher** and **Druelle** in the *Gazette des Hôpitaux* give the following concise information of the forms of cutaneous tuberculosis which appear in connection with measles. These consist almost always of multiple and disseminated foci, the elements of which often present a remarkable diffusion, invading simultaneously regions at a distance to each other. This topography is at variance with the usual localisation of cutaneous tubercle to a single region or to a few points of the skin, and gives the affection a special aspect. This dissemination of the lesions is found in nearly all cases, and lesions localised to one region are quite the exception. Another characteristic is to be found in the great rapidity of evolution in its initial stage: these lesions appear suddenly, and in a very short time assume a definite aspect, whereas usually cutaneous tuberculosis has from the onset a slow and insidious course. This rapidity of evolution is only found in the first stage; later on it has an aspect essentially chronic, like the majority of the forms of cutaneous tuberculosis. The cause of the dissemination and rapidity of appearance of these cutaneous lesions, which otherwise are attenuated forms and of slight virulence, resides in the general lowering of the organism by the attack of measles. Other infectious maladies of childhood have the same influence over the evolution of cutaneous tuberculosis which follows them, such as varicella, scarlatina, and pertussis, but to a less degree. Post-morbillous manifestations of cutaneous tuberculosis sometimes assume a warty form, at other times papular or papulo-pustular forms, in addition to the usual types. VINCENT DICKINSON.

The influence of feeding on infantile mortality (*'Lancet,' July* 22, 1905).—**Howarth** has collected some valuable statistics relating to Derby. He finds that amongst breast-fed children the causes of death which stand out prominently are bronchitis, pneumonia, and convulsions. Amongst those who are at first breast-fed and then hand-fed a considerable diminution in mortality as compared with hand-fed is noticeable. Most interesting, however, are the writer's observations on the death-rates recorded among hand-fed infants according to the kind of food used. In the aggregate the various patent so-called foods show a death-rate of 202 per thousand, as compared with 177 for milk and water mixtures. Those fed on condensed milk show a very high mortality, viz. 255 per thousand. The high death-rate occurring in infants fed on milk and water mixture is attributable to contamination of the milk and the results of ignorance. Howarth advocates the visitation of young mothers by sanitary officials who will instruct the parents in proper methods of infant feeding. He concludes by stating that the addition of patent foods to the dietary of very young infants is not only unnecessary and dangerous but always expensive.

JAMES BURNET (Edinburgh).

Achondroplasia ('*Lancet*,' *July* 22, 1905).—**H. M. Joseph** records a case of this rare disease, and gives a very complete table of measurements. The patient was a female, aged 3 years and 11 months. She was a strong child, with no history of previous illness. Dwarfism was unknown in the family. The child's mental condition was below normal. Her speech was indistinct and curtailed. The large cranium with prominent forehead, the depressed nasal bridge, and consequent flat appearance of the face, the small chest and prominent abdomen and buttocks, and the short limbs with trident fingers, made up a characteristic picture. The tip of the middle finger reached only to four centimetres above the great trochanter, while in the normal child it reached nine centimetres below the great trochanter. A small part of this difference was due to the want of complete extension of the elbow-joint. The limbs and chest were well below the average in measurement, and the face measurements were slightly below, while the cranial portion of the skull, the abdomen, and the circumference of the hands and fingers, were below the average. JAMES BURNET (Edinburgh).

Pathology.

Tuberculous infection ('*Amer. Journ. of the Med. Sciences*,' 1905, *vol.* cxxx, *p.* 95).—**R. C. Rosenberger** records the results of a study of the mesenteric glands in their relations to tuberculosis. These glands were found tuberculous in 20, enlarged in 22, and normal in 7 out of 49 tuberculous cases. Of 25 cases with pulmonary and intestinal lesions, 60 per cent. of the glands were tuberculous. Of 18 cases without intestinal lesions, 28 per cent. of the glands were affected. Of 25 cases showing bacilli in spreads made from the glands, 36 per cent. gave no gross evidence of tuberculosis. Of 24 cases not showing bacilli in spreads 87½ per cent. showed no gross evidence, but in 15 out of 16 of these the glands were infective to guinea-pigs. No less than 39 out of 40 cases gave evidence of tuberculosis, although in 60 per cent. the glands showed no gross evidence of the disease. Of non-tuberculous cases 21 were studied, 10 being children. Spreads gave negative results in all. Guinea-pigs were inoculated and 6 died within forty-eight hours. Of the remaining 15, 6 yielded distinct tuberculous lesions in the liver, spleen, and lungs; 8 gave negative results; 1 was doubtful. Four out of 9 adults and 2 out of 5 children gave positive results. In the children the glands were enlarged in all cases; in the adults the glands were enlarged in 4 out of 9. All the children were bottle-fed infants; the two giving positive results died from ileo-colitis at 2 and 9 months of age, the other 3 were 1, 2, and 9 months old. As a result of these and further observations it seemed that the tuberculous infectivity of the mesenteric glands was common to gland groups in other parts of the body, indicating a hæmatogenic rather than an intestinal infection, also that parenchymatous organs were only involved when tuberculous lesions were present elsewhere. From his observations Rosenberger concludes that: (1) In all cases of active and in almost all cases of inactive tuberculosis the mesenteric glands are tuberculously infective. (2) The glands may or may not show gross evidence of tuberculosis or tubercle bacilli in spreads. (3) In about 40 per cent. of cases showing no tuberculous lesions in any part of the body the mesenteric glands were tuberculously infective. (4) The tuberculous infectivity of these glands is probably shared by other lymph nodes throughout the body.

EDMUND CAUTLEY.

Congenital tuberculosis (‘*Arch. of Pediat.*,’ 1905, *vol.* XXII, *p.* 321). **Martha Wollstein** describes the pathology of a case of congenital tuberculosis. The mother died six days after confinement, and the child lived nineteen days. Advanced tuberculous disease was found in the placenta. Bacilli were found in the tubercles in the chorion, in cheesy masses in the villi and in the intervillous spaces. The case illustrated intervillous chorionic localisation of tubercle bacilli, with secondary involvement of the villous stroma. No bacilli were found in the vessels of the cord or on section. The uterus was tuberculous. No general post-mortem examination was permitted. The child showed acute miliary tuberculosis of the lungs, spleen, liver, kidneys, and mesentery; broncho-pneumonia, fatty liver, and hyperplasia of mesenteric lymph nodes. Evidently the infection was hæmatogenous. The appearances in the child suggested that infection had occurred comparatively late (just before birth). A *résumé* of reported cases is appended.
EDMUND CAUTLEY.

Report on the agglutination reactions of the Bacillus dysenteriæ (Shiga) with the blood serum of patients suffering from summer diarrhœa (‘*Johns Hopkins Hospital Bulletin*,’ *March*, 1905, *vol.* XVI, *p.* 93).—**Charles K. Winne** has examined the blood reactions of a hundred children suffering from summer diarrhœa at the Thomas Wilson Sanatorium. Details of the cases are appended. A reaction was not considered positive unless it occurred with a dilution of one in a hundred in an hour. Forty-five of the hundred cases gave a positive result, fifty-five a negative one. The date of the reaction was very variable, as was also its duration. It occurred on the second day in one case only. Of the cases that reacted the majority did so with a high dilution, one in a thousand. Positive results were more often obtained in infantile dysentery (*i. e.* cases whose stools grew Shiga bacilli) and dyspeptic diarrhœa than in simple diarrhœa.
A. ERNEST JONES.

Lesions of the colon in the new-born, due to congenital syphilis (*Comité Méd. des Bouches-du-Rhone*, *May*, 1905: ‘*Arch. Gén. de Méd.*,’ *September* 12, 1905, *p.* 2353).—**Alezais** read a paper in which intestinal changes found in a congenital syphilitic were described. These consisted in a diffuse fibrosis, with great thickening of the superficial part of the submucous coat of the colon, especially marked around the vessels. **Hawthorn** and **d'Astros** remarked on the close resemblance of the changes to those found in a case of Hirschsprung's disease (megalocolon) lately under their care.
A. ERNEST JONES.

Post-dysenteric cirrhosis of liver (‘*La Pediatria*,’ *May*, 1905, *p.* 396). —**Berghinz** describes the case, in the ‘*Rivist. di Clin. Pediat.*’ for March, 1905, of a boy, aged 5 years, in whom the question of alcohol, syphilis, malaria, and tuberculosis, direct or indirect, could be completely excluded. He had suffered for a year from a severe form of dysentery at repeated intervals and at the same time had become anæmic and thin, with vomiting, abdominal pains, scanty urine, and ascites. Hæmatemesis and collapse then supervened, the liver being hard and smooth and felt two fingers' breadth below the costal arch. Albuminuria and convulsive attacks preceded death. The autopsy showed hyperæmia of brain and turbid arachnoid fluid, the choroid flexus covered with a yellow exudation rich in Weichselbaum's diplococcus. In the thorax scattered foci of broncho-pnëumonia due to the same diplococcus. No tubercle. Abdomen full of yellow fluid. Stomach contained blood-stained fluid without evident lesion. Large intestine full of bloody slime, with cicatrices and numerous superficial ulcers. Liver hard, granular, with large tracts of connective tissue enclosing islands of hepatic tissue. Pancreas large and hard. Spleen large, containing an old infarct. Kidneys hyperæmic. VINCENT DICKINSON.

Levulosuria in the diabetes of children (*'La Pediatria,' May*, 1905, *p.* 364).—**P. Mazzeo** describes two cases occurring in the children's clinic at Naples: one, aged 6 years, had persistent glucose and levulose in the urine, death taking place after nine months from coma; the other, aged 7 years, was said to occur after a fall on the occiput, and in this case the levulose disappeared when all hydrocarbons were excluded from the diet; death occurred from coma after five months. The author is unable to give any explanation of these facts except that they point to the supposition that levulose is elaborated probably in the blood and other organs but not in the liver. VINCENT DICKINSON.

A case of tubercular cardiocirrhosis (Hutinel's type) (*'La Pediatria,' May*, 1905, *p.* 397).—**Menabuoni**, in the '*Rivist. di Clin. Pediat.*' for March, described the case of a child, aged 3 years, whose parents were free from tubercle. At 18 months he had croup and bronchitis, at 30 months whooping-cough, at 34 months fever, night sweats, intense thirst and cough. After fifteen days the fever ceased, but dyspnœa on movement suddenly appeared and oliguria. On admission there were signs of rickets and malnutrition; the right half of thorax, which moved less than the left, showed foci of broncho-pneumonia. There was bulging on each side of the sternum, especially the left, very faint apex beat in fifth left intercostal space interior to nipple line. Cardiac dulness increased, assuming a square outline, one side of which was 1 cm. outside the right sternal border, reaching as far as the second intercostal space. The first sound weak and arhythmic, the second reduplicated. Abdomen tympanitic, liver four fingers' breadth below ribs, spleen palpable, no ascites. Urine contained traces only of urobilin. The patient improved under suitable regimen, but after two months the fever and dyspnœa recommenced and the skin became icteric. The area of cardiac dulness increased, the lung became displaced to the left, the liver remained bulky and hard, the urine showed an alimentary levulosuria which did not exist previously. Œdema, ascites, and left pleuritic effusion supervened, and the liver reached the iliac crest. Death, which was preceded by slight albuminuria, took place at the end of a few months. The autopsy showed, beside pleuritic effusion and broncho-pneumonia, a large caseating bronchial gland and complete adherence of pericardium, between the two layers of which were numerous caseous tubercles. Valves and endocardium normal. Hepatic parenchyma nutmeg, capsule thickened. VINCENT DICKINSON.

Therapeutics.

A case of traumatic tetanus; cure after four serum injections (*'Aerztl. Sachverstaendigen-Zeitung,'* 1904, *No.* 23).—**R. J. Beck** reports the case of a boy who received a severe contusion of his right foot. In spite of most vigorous antiseptic treatment of the wound he developed tetanic symptoms ten days after, and four days later showed typical tetanus. The following day he received 10 c.c. serum anti-tetanique of the Institute Pasteur hypodermically, with only transient improvement. Further injections succeeded in removing every trace of the disease. Beck does not hesitate to attribute the saving of the life of the patient to the unsparing exhibition of the serum. D. O'C. FINEGAN.

Tetanus (*'Australasian Med. Gaz.,'* 1905, *vol.* XXIV, *p.* 251). — **H. Swift** reports two cases in girls aged 6 years. One was treated with serum and recovered. He gives an analysis of 16 cases admitted to the Adelaide Children's Hospital in 15 years. Of these 11 recovered. The 5 fatal cases averaged less than five days in hospital, the longest one being in for eight days. The incubation period averaged eleven days, the shortest one being five days. As usual, it was found that the shorter the incubation period the greater was the severity. A temperature over 101° F. was a bad sign, and over 103 F. of very grave significance. Two out of three treated with serum recovered. **W. T. Hayward** (*loc. cit., p.* 253) reports a fatal case in a boy, aged 12 years, with an incubation period of six days and death within two days from the onset. The temperature was only 98° F. half an hour before death, but rose to 105° just before death. In another boy of the same age the incubation period was doubtful. He was inoculated with serum on the sixth day of the illness and the nine following days. Gradual recovery. Chloral was also used in large doses. EDMUND CAUTLEY.

Pasteurised *versus* **clean milk** (*'Amer. Journ. of the Med. Sciences,'* 1905, *vol.* CXXX, *p.* 140).—**M. E. Pennington** and **J. A. McClintock** made some valuable observations on the micro-organisms in pasteurised and in clean milk in Philadelphia. The samples were carried directly, ice-packed if necessary, from the wagon or shop to the laboratory. The certified milk was usually about nineteen hours old, and the pasteurised milk from ten to twenty hours old. The latter was the product of twelve different pasteurising plants. The certified milk came from five different dairies. Pasteurised modified milk for infants was also investigated. It was not so clean as the raw whole milk. These samples were obtained in May and June, 1904. It was found that commercial pasteurised milk was richer in organisms than the certified milk, and that a rapid increase in the organisms took place even at refrigerator temperatures. The pasteurised modified milk frequently showed an appalling initial count, and almost invariably a very high count at the end of twenty-four hours. The commercial pasteurising plants succeed in reducing the original bacterial content of the milk to a very low figure, but again contaminate it in the cooling and bottling of the milk. These observations form a very serious indictment of commercial pasteurising methods, and emphasise the importance of *clean* milk.

EDMUND CAUTLEY.

Fat and marasmus (*'Arch. of Pediat.,'* 1905, *vol.* XXII, *p.* 431).—**H. Stern** discusses the fat question in its relation to the production and cure of marasmus. Most cases of marasmus occur in artificially fed children from gastro-intestinal disturbances, which are very often due to the food, and not infrequently to its fat contents. The chemical character of the fat has received little attention. The fat of cow's milk, compared to that of human milk, contains far more volatile fatty acids, the most important being butyric acid. Butyric, caproic, caprylic, and capric acids are 6-8 more in amount in cow's milk than in human milk. Butyric acid is the mother substance of the acetone bodies to which various infantile disorders have been ascribed. Physically the infant cannot deal with the fat of cow's milk, and relatively larger proportions are found in the stools than in those of the breast-fed. Further, the volatile fatty acids irritate the intestinal mucosa. Withdrawal of milk fat in hand-fed infants often results in cessation of local disturbance. To replace it yolk-fat must be given. It should not be used indiscriminately, but reserved for cases of chronic gastro-intestinal irritation and marasmus. The yolk-fat must entirely replace the milk-fat, and be adequate in amount. One yolk contains about six grammes of fat. EDMUND CAUTLEY.

Methylene blue in the treatment of noma (*'Real Accad. di Med.,' March* 11, 1905).—**G. Alvany** reports three cases of noma in which applications of a 2 per cent. solution of methylene blue were made every four hours, after the method of Siredey of Mantua. One case, a little girl, died on the second day with symptoms of acute toxæmia. The second showed ulceration of the inner aspect of the left cheek on the point of perforation, ulceromembranous gingivitis and severe general symptoms. The third case was similar, but occurred as a complication of measles. A rapid cure resulted from the treatment in both; and the author believes that the action of methylene blue is due, not only to its antiseptic power, but also to the fact that it penetrates all the tissues as, unlike the caustics in common use, it does not coagulate albumin. HAROLD BARWELL.

Treatment of infantile diarrhœa by the gastric juice of the pig (*'Gazette des Hôpitaux,' July* 20, 1905, *p.* 967).—**Maurice Hepp** gives the result of some experimental and clinical researches on digestion. He has studied especially the chronic gastro-intestinal troubles that so often follow recovery from acute "green diarrhœa," leading to athrepsia. For this condition he tried first dog's gastric juice, but its odour and great acidity caused it to be vomited on every administration. He was then led to try pig's gastric juice, and had obtained very satisfactory results with it in the treatment of the above condition. He orders six teaspoonfuls a day, to be given about half an hour before meal-time. A. ERNEST JONES.

Treatment of Sydenham's chorea (*'Arch. Gén. de Méd.,' September* 12, 1905, *p.* 2329).—**H. Grevet** discusses at length this subject. He recognises clearly that no specific treatment is known, and that the remedial measures available are of only limited value. Hydrotherapy is accounted of service, not only during convalescence as advocated by many authorities, but throughout the course of the illness. To young children it may be applied by either a sponge- or needle-bath. Electricity is of value in the long-continued cases, best in the static form, or, failing this, as a galvanic current. The sedative action of violet rays and lumbar puncture claimed by many writers is not observed in practice. Of drugs, arsenic and antipyrin are the two that most often prove useful; opium and chloral are indicated in the presence of severe movements, bromides and cannabis indica being unreliable in such cases. A. ERNEST JONES.

Injections of sea-water in infantile therapeutics (*'La Presse Médicale,'* 1905, *No.* 66, *p.* 521).—**L. G. Simon** and **Pater**, prompted by the favourable reports of this therapeutic measure in various forms of tubercular disease in children, injected small doses in five tubercular children and in five others with non-tubercular disease, gastro-enteritis and wasting. They obtained no amelioration in any case, either in physical signs or in the general condition; diarrhœa did not diminish, nor were the nutritive functions improved. Each injection occasioned a febrile reaction, sometimes slight, generally well-marked, and even excessive. This thermic reaction attains its maximum during the six hours following the injection. The diminution of weight was constant and always progressive. Two cases were made worse, as if a sudden stimulus were given to the tubercular process. In the non-tubercular cases no improvement was manifest, and, although the thermic reaction was absent or very slight, the weight continued to diminish. The amount injected was small, not more than 10 c.c. for grown children and 5 c.c. for infants. For some time past Hutinel has noticed thermic reactions, which in certain cases injections of artificial serum produces in tubercular children: it might be said that these injections acted as a touchstone to tuberculosis, and that the reaction they produced had the same significance as that obtained from Koch's tuberculin. The authors think that the same is the case with sea-water injections: the more or less intense reaction following these injections confirms the existence of a latent or suspected tuberculosis, and sea-water may prove a reagent more delicate than artificial serum, although it is far from being a rational treatment of that condition. Vincent Dickinson.

The use of sea-water and artificial serum in new-born children (*'La Clin. Infant.,'* 1905, No. 13, *p.* 111).—**Lachèze**, in his inaugural thesis, attempts to render acceptable the ingenious ideas of Quinton, who claims to have shown that sea-water is a special medium with properties that have no resemblance to those of artificially prepared saline solutions. The author gets similar effects from a 7 per 1000 solution of chloride of sodium, and his conclusions are: Saline medication in the form of subcutaneous injections of artificial serum, given before feeding, exerts a profound influence on the infant's nutrition, and particularly on the increase of weight. Is this powerful action due to the fact that we have a marine origin? (Quinton.) If the 0·84 of salts in sea-water consist of chlorine and sodium, it also contains in various proportions a number of other rare elements whose action must be taken into consideration, and which a solution of 7 per 1000 chloride of sodium is incapable of producing. It seems, therefore, that sea-water in the majority of cases ought to replace artificial serum. The strongest indications for this treatment are—congenital debility of premature children, gastro-intestinal trouble in nurslings with loss of weight, and all cases where the vitality of the infant is enfeebled by an acute affection, and where its resistance is on the point of failing. The injections are made by preference in the supra- and sub-spinous regions of the scapula, and consist of: (*a*) For artificial serum 10–15 c.c. of a 7 per 1000 solution of chloride of sodium every other day. The solution must be free from all antiseptics, especially carbolic acid. (*b*) For marine serum sea-water is taken in calm weather at six metres depth and mixed with two thirds its weight of spring-water, the whole sterilised in the cold by a Chamberland filter: 5–20 c.c., according to the age of the child, every third day.

Vincent Dickinson.

Otology, Laryngology and Rhinology.

Some points in the pathology and treatment of the middle-ear complications of scarlet fever and measles (*'Med. Chronicle,' September,* 1905, *p.* 327).—**A. Knyvett Gordon.**—In this interesting and persuasive contribution the author shows clearly how unnecessary and how dangerous it is to allow middle-ear suppuration to continue indefinitely after the disease which caused it. In the first place he deals with certain clinical and anatomical peculiarities of the states which complicate measles and scarlet fever. The most important of these is the great tendency for the mastoid antrum to be infected along with the tympanum from the beginning. The appearances in the tympanum may be delusively slight, in spite of advanced mastoidal caries; granulation tissue and pus, however, are usually present, and necrosis of the ossicles is common. One of the most striking features is the frequent absence of local signs over the mastoid; in spite of this the author says he has never failed to find caries of the antrum or cells when operating for an otorrhœa. At the onset of the disease there is as a rule no preliminary pain, discharge being commonly the only symptom. So insidious is the progress of the disease that it is not unusual for there to be no fresh symptom until the onset of an intra-cranial complication. Permanent recovery without operation occurs in 60 per cent. of cases of scarlatinal otitis within periods varying from two weeks to three months. The author is doubtful whether after three months recovery ever occurs without operation. With regard to the prevention of infection of the tympanum in scarlet fever, he recommends the routine use of the nasal douche during the acute stage of the disease. The instrument used should be readily sterilisable, the maximum pressure not more than two feet of water, and the fluid sterile but not strongly antiseptic. When hypertrophied tonsils are causing much obstruction, they may be removed with benefit even at the height of an acute faucial inflammation. As a routine, however, the operation may be left till the third or fourth week. Post-nasal adenoids may be removed at the end of the first fortnight, and as otorrhœa often does not appear until after the third week many cases of otitis would probably be prevented by this measure. Whenever adenoids are causing obstruction while the throat shows severe septic ulceration, they should be removed. When otitis does arise treatment through the meatus should be used at first, the most important feature being the establishment of adequate drainage. When the otitis has lasted for a month without improvement under intra-tympanic treatment, operative interference should be undertaken. The author recommends the performance of the radical operation at once, rather than drainage of the antrum. The radical operation, performed early, often improves the hearing. The author concludes by pointing out how important it is that these otorrhœas should be cured before the patient leaves the fever hospital, and remarks that there seems to be an undue fear of operating in such circumstances, as if, on account of some obscure aerial influence, it were more difficult to secure asepsis there than in a general hospital or private house. WILFRED TROTTER.

Congenital membranous occlusion of the choanæ ('*Annales des Maladies de l'Oreille, du Larynx*,' *etc.*, *August*, 1905, *p.* 159.—**L. Bellin** and **R. Leroux** describe a case of this malformation in a male, who was 24 years of age when he came under their care. The choanæ were well shaped, but closed by a membrane placed slightly obliquely about 1 cm. in front of the orifice. It was greyish-pink in colour, and complete on the left side: at the upper third on the right side was a minute opening. The membrane on the left side was divided with the cautery; but, this proving insufficient, both diaphragms were completely removed with punch-forceps after straightening a concomitant deflection of the septum.

HAROLD BARWELL.

Surgery.

Pneumococcus infection of the hip-joint (*'Medical News,' May* 20, 1905).—**Leonard W. Ely** reports the case of a boy, aged 4 years, in the Roosevelt Hospital. The child had an attack of pneumonia, commencing fourteen days before admission to the hospital, and for five days previous to this the left hip had been swollen and painful. On admission, considerable swelling was evident about the left hip, and the veins were large and prominent. There was much limitation of movement in the joint, and deep fluctuation over the body of the femur. Temperature 103° F., and pulse 164. Leucocytosis 24,400. The joint was aspirated next day and pus discovered. Under ether the joint was opened and all the pus evacuated. Free drainage was provided for. The child improved somewhat, but developed an empyema about a fortnight later. The pus from the hip-joint was found to contain pneumococci only. The child died from secondary hæmorrhage from the wound in the hip-joint about one month after admission into the hospital. P. Lockhart Mummery.

Intra-cranial hæmorrhages of the new-born (*'Amer. Journ. Med. Sci.,' October*, 1905).—**Harvey Cushing** records four cases of surgical intervention in this condition. He points out that many cases of spastic paraplegia or "Little's disease" are due to intra-cranial hæmorrhage at the time of birth, and that the only possible time for successful treatment is soon after birth. During the process of parturition the veins passing over the cortex to enter the longitudinal sinus are subjected to strain from the overriding of the parietal bones, and rupture is not uncommon, with the result that blood is poured out into the subdural space on one or both sides. In the writer's experience the diagnosis of this condition is not difficult, and if there is any doubt on the subject he believes that lumbar puncture would settle it, as blood-cells would always be present in the meningeal fluid. As regards the diagnosis, he lays stress on the following points: (1) the history of the labour, and especially of post-partum asphyxiation; (2) a tense fontanelle, probably non-pulsatile; (3) convulsions appearing a few days after birth; (4) undue reflex activity; (5) ocular palsies or differences in the size of the pupils. The operation which he recommends and has practised in four cases is to turn down the parietal bone on one or both sides, open the dura mater, and turn out the blood and blood-clot. Irrigation with warm salt-water is employed over the surface of the brain. The first patient was three days old, and the operation above described was done on the left side of the skull, but the patient died suddenly eight hours later. The second patient was eight days old, a unilateral operation was performed, and the free blood and warm clots were irrigated away with warm water. The child made a good recovery, and a year later was reported to be "a fine specimen of wholesome babyhood." The third case was a child aged 9 days, with very extensive subdural extravasation. A bilateral operation was done in this case, and the child has been progressing well since. The fourth patient, an infant aged 3 days, was found at the operation to be suffering from very extensive extravasation, and never rallied from the shock. The author concludes from his experiences that these very young infants stand the operation well if proper precautions are taken as to hæmostasis and the avoidance of exposure. An important point is that operative interference should be early, as soon as a diagnosis can be made.

G. A. Sutherland.

The genital crisis of the newly born (‘*La Presse Méd,*’ *July*, 1905, *No.* 57, *p.* 451).—Although only one crisis of puberty is usually admitted—*i.e.* that of adolescence, yet the remarkable studies of MM. Jacquet and Rondeau (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1905, pp. 323–6) have stimulated **C. Renouf** to make this the subject of his thesis (Paris, 1905). He says that all the phenomena of adolescent puberty which are brought about by the establishment of the ovarian and testicular secretions at that period are to be found, though in a less marked degree, during the first weeks after birth. During the course of the first week of life, usually about the fifth or sixth day, a true genital hæmorrhage is at times observed, variable in quantity and lasting only thirty-six to forty hours. It is considered to be excessively rare, about 0·35 in 100 cases. Renouf, however, found that in 221 female infants of less than fifteen days old the frequency was 2·59 per 100 cases; and Halban has also demonstrated that even in the absence of all visible hæmorrhage the vaginal secretions in the newly born frequently contain red blood-corpuscles. Bayer has observed that the uterus diminished during the first days of life, from 32 mm. to 25 mm.; and, on the other hand, Halban has shown that during genital hæmorrhage the uterus presents a marked capillary congestion, with or without subepithelial hæmorrhages, histologically comparable with what is found in the adult uterus during menstruation. With regard to the ovaries Halban states that they do not participate in the uterine congestion and do not contain ripe follicles, but, on the other hand, Hofbauer and de Sinety have noticed fully-developed Graafian follicles in new-born infants. With regard to the prostate Schlachta and Halban found it distinctly congested, increased in size, its tubular epithelium swollen, but at the end of the second month it undergoes a true involution, so that in infants of three or four months it is smaller than at birth. M. Renouf agrees with Bar in considering that the form of congenital hydrocele which undergoes reabsorption without leaving any trace in the space of three or four weeks is connected with modifications in the testicles, although no histological examination of these has hitherto been made. Both male and female children also present on the sixth to ninth day after birth congestion of the mammary gland, a transient mastitis which occurs, according to the author, in 41 per cent of cases. According to Keifer and Halban this consists of proliferation of all the epithelial elements and their lacteal transformation. As in the mother who does not suckle, it undergoes involution at once when not used for lactation. The vernix caseosa and the sebaceous milium, which, like the acne of puberty result from the activity of the sebaceous glands, constitute the last feature of the analogy which exists between the puberty of adolescence and the genital crisis of the newly born. Thus, in connection with embryonic life, specially with regard to the intra-uterine development of the genital system, a veritable "puberty in miniature" is to be found in the newly born. If true puberty is set in motion in some way by internal secretion, what is the cause of the genital crisis of the newly born? There are two hypotheses. M. Jacquet propounds that "the pathology of the embryo, with regard to disorders of evolution, is the recapitulation of the pathology of the individual." It is towards the end of the fourth month of intra-uterine life that the evolution of the genital system becomes particularly active, and, therefore, the genital crisis of the newly born may be considered the end of the crisis of fœtal puberty. The second theory, which is supported by the researches of Keifer and Halban, makes the internal secretion of the placenta the chief factor, an organ resulting from the fusion of the products of two glands having an internal secretion—the ovary and the testicle. The mode in which this internal secretion influences the fœtus may take place in two ways. According to Halban this internal secretion acts upon the fœtus throughout intra-uterine life and ceases at birth; the supply then becoming exhausted, the glands (uterus, ovaries, testicles, prostate, mammæ, and sebaceous) undergo a kind of involution following their hypertrophy. According to Keifer the internal placental secretion passes into the fœtal organism only during parturition, favoured by a certain modification in the conditions of osmosis, and excites the glandular phenomena, specially that of the accession of milk, which are observed during the first days after birth.

Vincent Dickinson.

Review of Book.

The Care and Management of Delicate Children. By Dr. Percy Lewis, Hon. Medical Officer to the Victoria Hospital and Surgeon to St. Andrew's Convalescent Home, Folkestone.

This book is one for which there is much need, and it is admirably adapted for the kind of readers to whom it is addressed. The style is easy and the teaching definite.

The author advocates the sending of delicate children, especially those whose homes are in town, to small schools where special attention can be given to them. If it were advisable to delegate to others the responsibilities of parenthood, it will generally be found that the mothers of such children will rarely part with them. There are, however, instances where the plan recommended is the only one to pursue in the child's interest.

The importance of noting errors in diet and late meals as fruitful causes of indigestion and its numerous sequelæ are referred to with convincing lucidity in several chapters. It is to be regretted that Gregory's powder is not mentioned among the domestic remedies for gastric troubles resulting from indiscretions in diet. Schoolmasters will find useful advice in the matter of corporal punishment and cases of "moral obliquity." The chapter dealing with diet abounds in common sense, while the encouragement of fads in feeding meets with wholesome condemnation. The subjects of clothing delicate children, baths, and ventilation receive consideration. It would, however, have been a valuable addition to this part of his subject if the author had given his opinion as to the advisability or otherwise of paddling in the sea. Physical exercise is dwelt upon somewhat fully, and excellent rules for carrying it out to the best advantage are laid down.

In the chapter on convalescence and chronic illness the author shows that our efforts in treating these states should be towards combating the lowered vitality which underlies the debilitated condition of the patient. The appendix deals with exercises for combating various deformities and illustrations of the various movements applicable to special cases.

The book should be in the hands of those responsible for the rearing of delicate children, while the junior medical practitioner will find much information and many valuable hints which will help him in family practice, especially if his professional education has been limited to the usual hospital curriculum.

The printing and get-up of the book are good, and there is an ample index.

Chas. W. Chapman.

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